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TELEPHONE ENGINEER & MANAGEMENT

the telephone industry magazine

May 1, 1961
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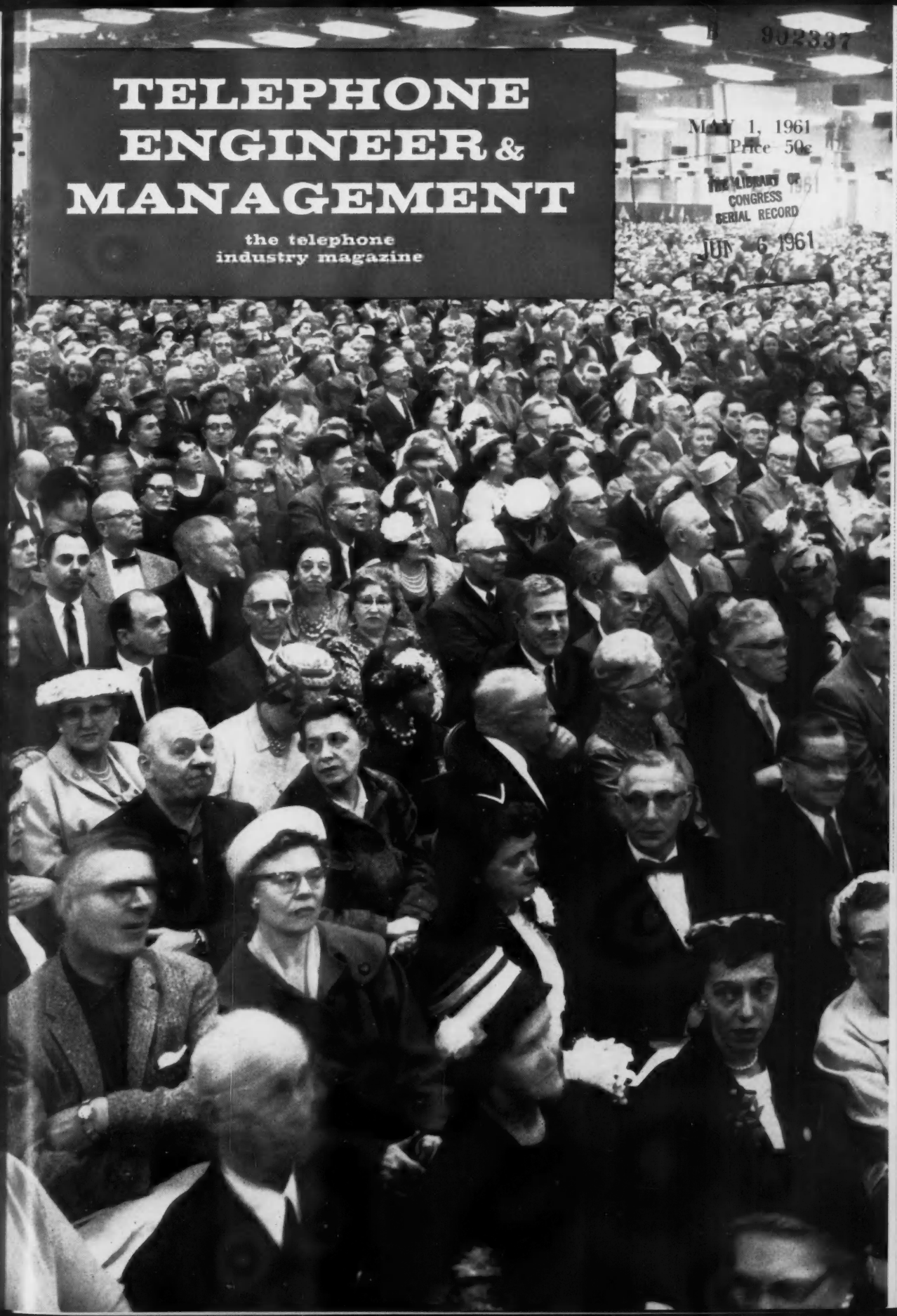

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THE NEW POTENTIALS OF DIRECTORY REVENUE

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Ray is one of our "Revenue Men" in Marion, Ohio.

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He and his wife make their home there now with their four sons and two daughters. Six children keep him busy but when he does find a free moment or two he works for the Cub Scouts, the P.T.A., and the Community Fund.

Ray Wilson is another example of the "Revenue Men" who work for the General Telephone Directory Company—who work for you, who are an asset to any community in which they live.

Are you keeping pace with the trend of increased directory revenue? The potential is enormous. You can't afford *not* to keep pace.

The revenue you earn from a well-sold, well-published directory can give you the highest net profit of any service you sell. Little or no expense is charged against it. And directory profits can make a hefty contribution to total net earnings.

Our "Revenue Men" are trained to help you exploit the rich potential of directory revenue. Backed by our Complete Directory Service Plan, they work with market-tested procedures to tap every source of revenue: local, regional and national.

May we show you a plan tailored to fit your needs? No obligation, of course. Just call or write.

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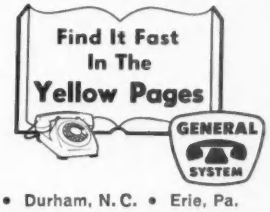

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THE TE&M FRONT COVER

AT&T share owners — 18,420 of them, of all ages and from all walks of life — gathered in Chicago's McCormick Place for the company's 76th annual meeting. The first such meeting to be held outside New York City, it was by far the largest in attendance; the previous record having been 11,900 at the 1959 meeting in New York City. Thousands of share owners had arrived at the big, new lakefront exposition center by mid-morning. They viewed the many telephone exhibits ranging from the petite Princess telephone to a demonstration of communications via satellite. (See Page 51 for complete story.)

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ALCOA BOOTHS BOOST REVENUE BY 15 PER CENT!

In Hickory, North Carolina, Central Telephone Company reports:

"More than half our outdoor booths are Alcoa Aluminum outdoor booths," says Mr. W. R. McGrew, division manager for Central Telephone Company, Hickory, N. C. "And some of them have been in use for more than four years. We estimate a *10 to 15 per cent increase in revenue* from Alcoa booths over others!

"Maintenance-free, easy to keep clean and neat, well lighted, Alcoa booths seem to actually *attract* customers. Doors don't stick . . . glass breakage is less . . . and we don't have to constantly repaint aluminum booths," Mr. McGrew avers.

Solidly built with Alcoa® Aluminum Extrusions, these booths resist normal wear and tear—and vandalism as well! The Alumilite* finish stays bright and clean. Aluminum won't rust . . . resists corrosion. If space is no problem, look to large and sturdy Alcoa outdoor booths. For indoor (and sheltered exterior) installations, check on the new Alcoa "Compact" booth—only 28¾ in. square! Whichever booth you need, call your telephone supply jobber . . . or write: Aluminum Company of America, 1781-E Alcoa Building, Pittsburgh 19, Pa. World-wide sales through Alcoa International, Inc., 230 Park Avenue, New York 17, N. Y.

*Trade Name of Aluminum Company of America

ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

Boost Your Profits With
LEICH PABX's

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Subsidiary of
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These new Leich service features are tailor-made for your motel-hotel customers. Tell your business customers about them—and see how they sell!

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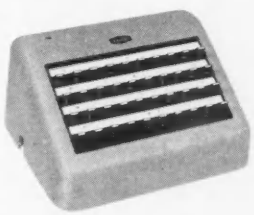
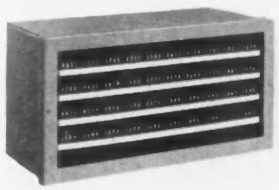
- **TWO OR THREE DIGIT DIALING BETWEEN ROOMS** (May be restricted by PABX attendant in late evening hours.)
- **ONE DIGIT DIALING** to PABX attendant, hotel garage, room service, maid service, to trunks, when permitted, etc.
- **ANY STATION MAY CALL OUTSIDE TO MAIN EXCHANGE** without waiting for attendant. Charges on local calls are automatically tabulated on message register cabinet. (Toll calls may be restricted if desired.)
- **ROTARY LINE SERVICE** permits listing only one number for a group of telephones. For example, if you dial "5" for maid service and the line is busy, you are automatically routed to an idle telephone in this department.

Boost your profits with Leich PABX's. Write today for complete information.

KEYSET TURRET EXTENDS INCOMING CALLS QUICKLY.



MESSAGE WAITING TURRET



MESSAGE REGISTER CABINET COUNTS THE NUMBER OF CITY CALLS PLACED BY EACH GUEST.

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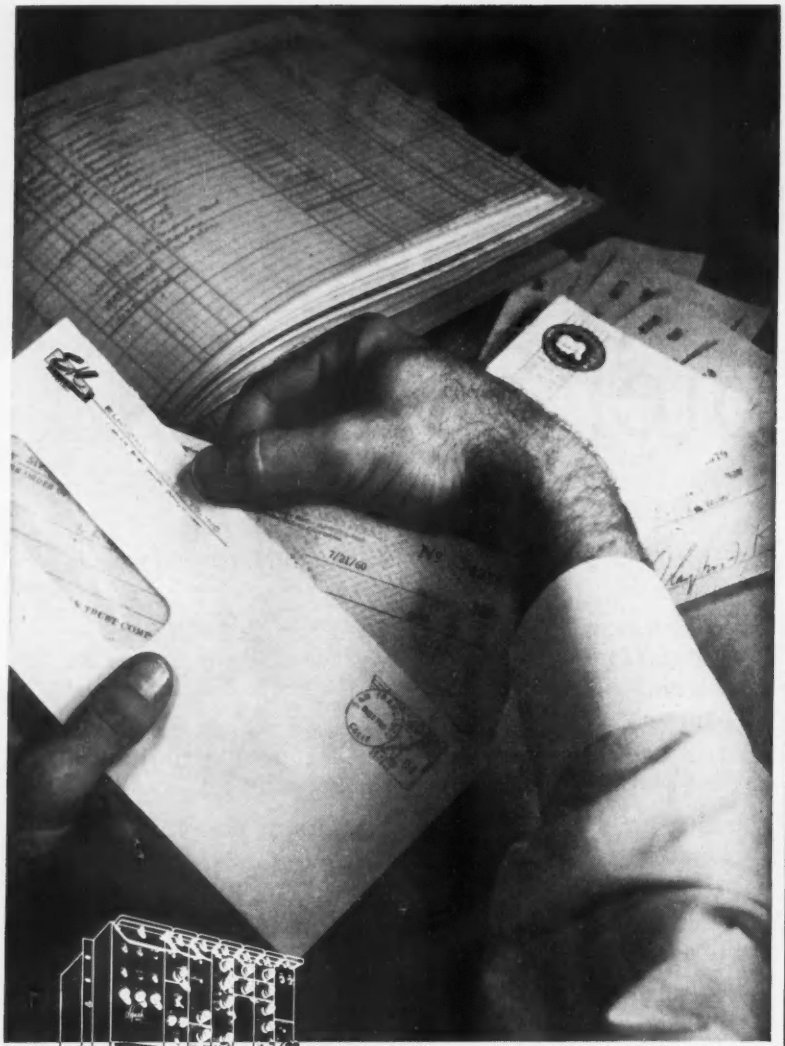

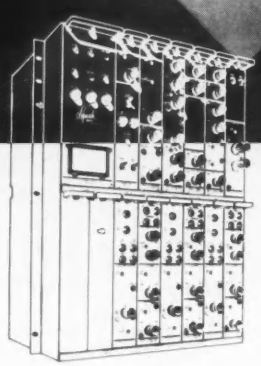

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KANSAS-MISSOURI Tel. Association, Continental Hotel, Kansas City, Mo., May 22-23.

PENNSYLVANIA Tel. Assoc., Pocono Manor Inn., Pocono Manor, Pa., June 5-7.

NATIONAL Safety Council's Public Utilities Section, Executive Committee, Laurentien Hotel, Montreal, Quebec, Canada, June 13-14.

WASHINGTON-OREGON Tel. Assoc., Empress Hotel, Victoria, B. C., June 15-16.

NEW YORK Tel. Assoc., Scaroon Manor, Schroon Lake, N. Y., June 19-21.

CALIFORNIA Tel. Assoc., Hawaiian Village, Honolulu, Hawaii, June 26-30.

ALASKA Tel. Assoc., Hotel Not Announced, Palmer, Alaska, Aug. 21-23.

TENNESSEE Tel. Assoc., Hermitage Hotel, Nashville, Tenn., Sept. 6-7.

ARKANSAS Tel. Assoc., Arlington Hotel, Hot Springs, Ark., Sept. 11-12.

ROCKY MT. Tel. Assoc., Owyhee Hotel, Boise, Sept. 13-15.

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Protecting millions of underground voices

with Life-Guarded Bermico®

Telephone companies benefit by the proved value of Bermico electrical conduit — not only as protection for trouble-free service in communications systems, but as a sure, fast, economical way to lay cable.

Made of tough, bituminous cellulose fibres, Bermico electrical conduit has:

- *Bell Laboratory Approval* — Including Bermico "B" fibre duct (Type I) for concrete encasement and "C" fibre duct (Type II) for direct burial.
- *Extra long service life* — Highly resistant to shock, water acids, alkalies and corrosion, Bermico lasts as long as the cables it protects . . . *outlasts a lifetime.*
- *Smooth interior bore* — Has an exceptionally low coefficient of friction; minimizes friction; will not freeze.
- *Lightness of weight* — Bermico is lighter than clay, concrete, asbestos, cement, steel or cast iron. Volume for volume, it's the lightest factor in installation.

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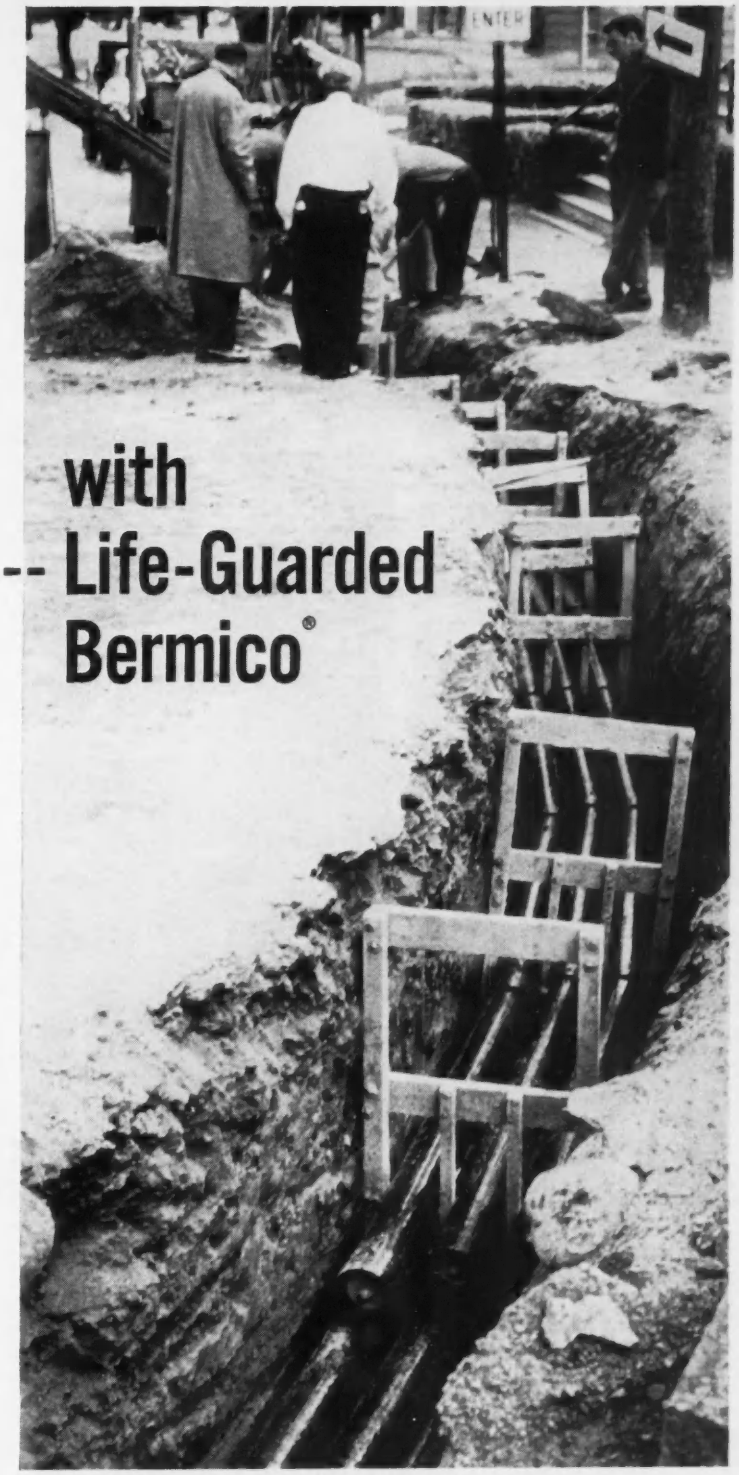
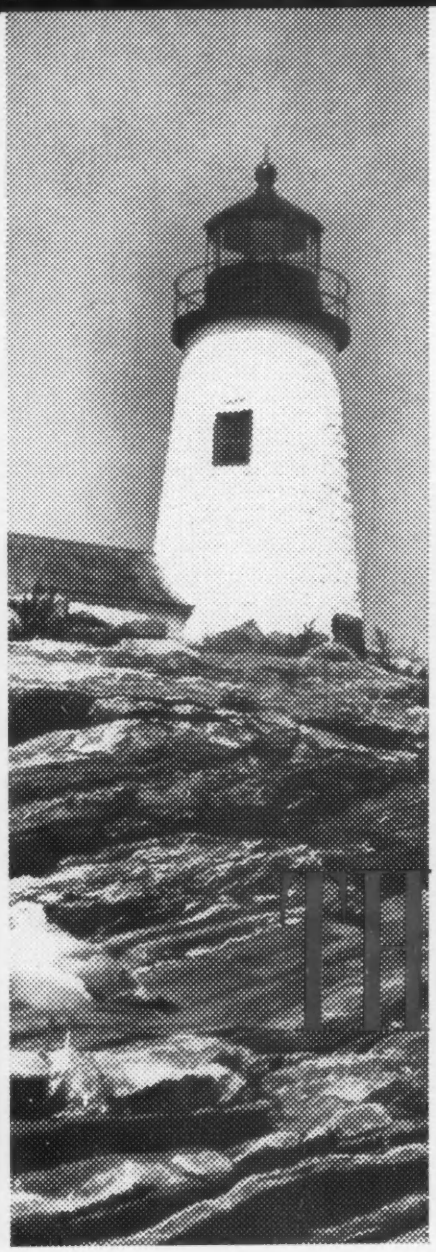
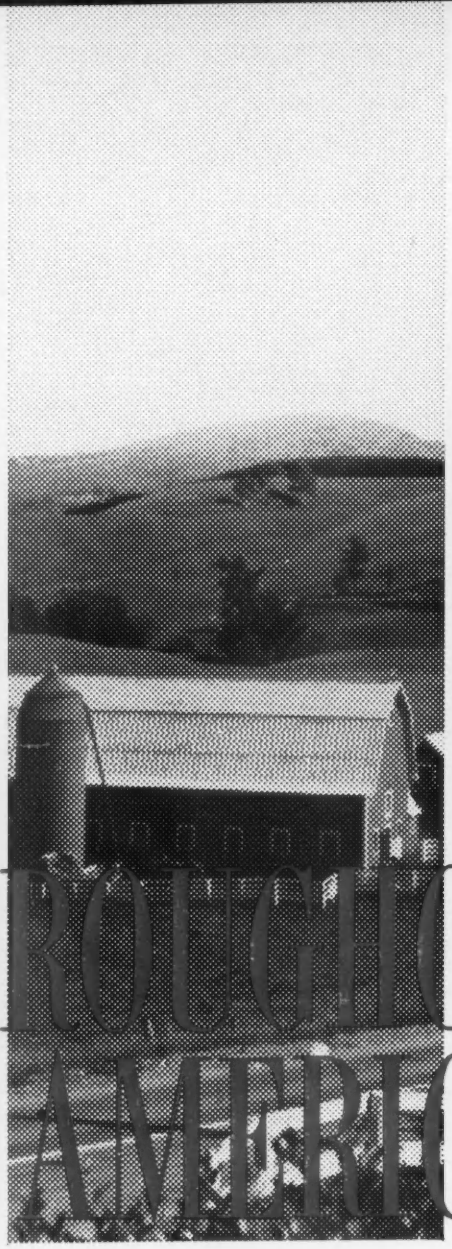


For a communications line in Framingham, Mass., the New England Telephone & Telegraph Company uses Bermico electrical conduit.

LIFE GUARDED BERMICO ... OUTLASTS A LIFETIME





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ONE TELEPHONE STANDS OU.

The K-500 – tested and requested by more independents than *any* other subscriber unit. The standard setter of the industry, in both design and performance.

Call ITT Kellogg–your source for the famous K-500 instrument, in both table and wall models, in black, white and nine attractive colors.

Another ITT Kellogg Exclusive!

3 complete Sell-A-Phone promotions . . .

help sell *more home subscriber services!*

Choose the promotion, or promotions, that best suit your company. Get everything you need to promote extension phones, color and other revenue-building "deluxe" home services.

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NEWSLETTER TELEPHONE INDUSTRY

Prepared By The Editorial Staff of TELEPHONE ENGINEER and MANAGEMENT

ON THE 1st OF EACH MONTH ★ ON THE 15th OF EACH MONTH

Dear Sir: May 1, 1961

LEGISLATION INTRODUCED TO PERMIT SALE OF PHONES OPERATED BY BUREAU OF INDIAN AFFAIRS . . . . Legislation which would permit sale of government-owned telephone facilities administered by Bureau of Indian Affairs to private telephone organizations has been introduced in Congress by Senate Majority Leader Mike Mansfield (D., Mont.), with approval of the department of the Interior. Action stems from request last year by Range Telephone Co-Op, Inc., Forsyth, Mont., for authority to buy telephone system of Bureau of Indian Affairs at Lame Deer, Mont., on the northern Cheyenne reservation. Co-op said it was planning to extend its facilities to the area if suitable arrangements could be made.

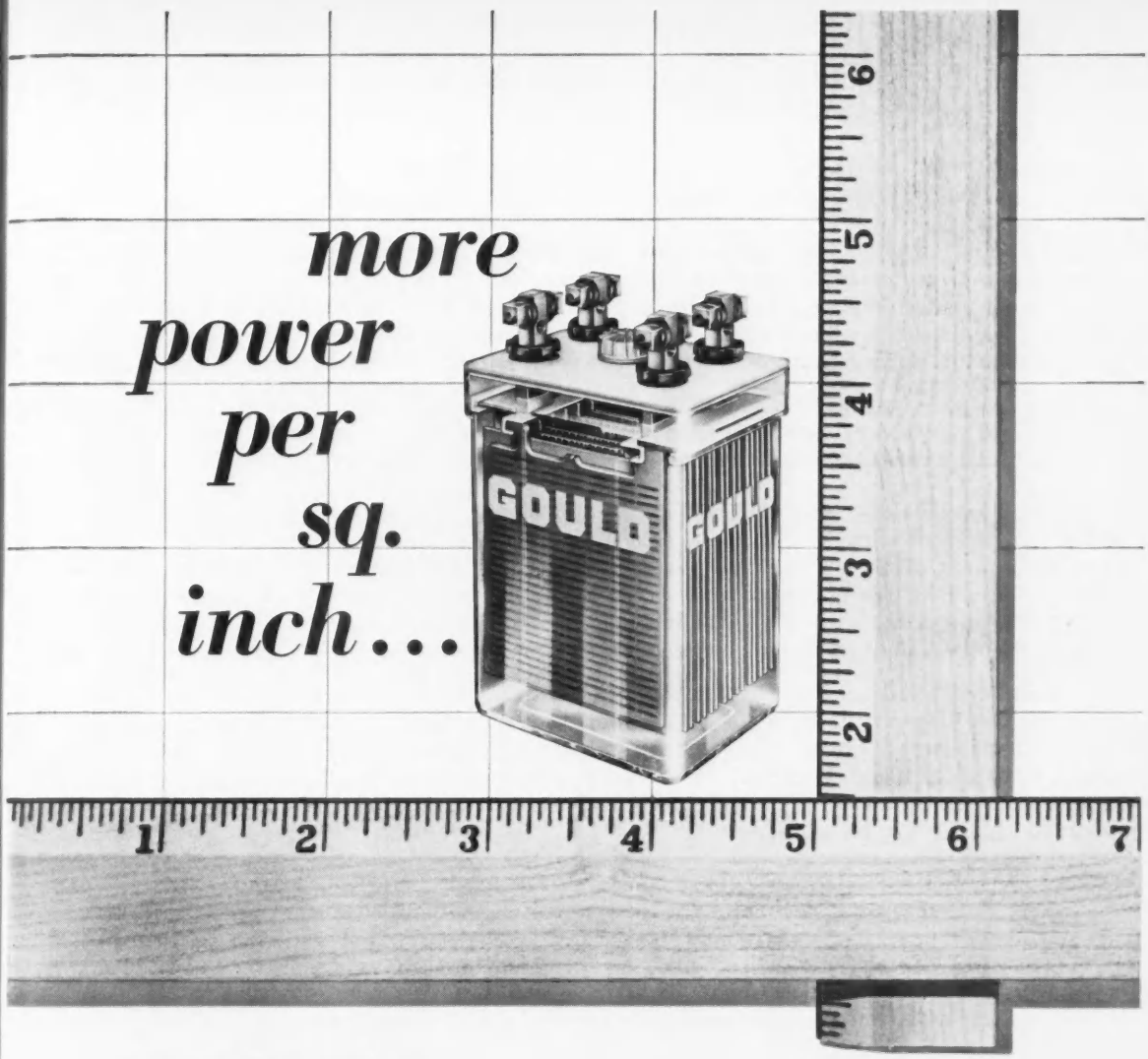
Sending draft of proposed bill to Senator Mansfield, Assistant Secretary of the Interior John A. Carver, Jr., said that "At the present time the bureau has perhaps six or eight systems that are similar to the circumstances surrounding Lame Deer. As cooperatives and utility companies move closer to reservations, others will develop, and the bureau should have the authority to act when these commercial companies are in a position to provide a utility service to the general public around an Indian reservation, and disposition of the system is in the interest of the government."

The bill introduced by Senator Mansfield would provide that "Except for electric utility systems constructed and operated as a part of an irrigation system, the Secretary of the Interior is authorized to contract under such terms and conditions as he considers to be in the best interest of the federal government for the sale, operation, maintenance, repairs, or relocation of government-owned utilities and utility systems used in the administration of the Bureau of Indian Affairs"

PERRINE & WIGGINS TO REPRESENT COMMISSION AT FCC HEARING ON WATS . . . . Two members of National Association of Railroad & Utilities Commissioners' Special Telephone Committee, George R. Perrine of Illinois Commerce Commission & Ben T. Wiggins of Georgia Public Service Commission, have been appointed state commissioners in FCC's hearing on wide area telephone service. An invitation was extended by FCC to NARUC to appoint cooperating commissioners in WATS case at request of Georgia Commissioner Walter R. McDonald.

GSA ANNOUNCES PLANS FOR UNIFIED TELECOMMUNICATIONS SYSTEM . . . . Plans for unified telecommunications system for civilian agencies of government, operating as one entity the vast majority of existing leased systems of civilian government agencies and serving as nationwide system of linking government departments together in national emergency, have been announced jointly by the General Services Administration & Office of Civil & Defense Mobilization. Program for unified system, which has been considered at various times as far back as 1951, was announced with specific White House authorization. It is understood that similar White House blessing was given program in late days of Eisenhower administration.

New system — to be known as Federal Telecommunications System, or FTS — will be operated via leased lines & facilities provided by commercial common carriers. There will, however, be a nationwide radio backup system, operated in high frequency or very high frequency areas, which will be available through



GOULD *stationary batteries*

In the new, compact Plastrite Jar, Gould Stationary Batteries save 30 to 40% floor space. This means much greater power in a lot less space—you can actually increase your battery room capacity without increasing the room size!

All new design assures top performance. New Silicone O-Ring post seal expands under compression, prevents escape of electrolyte. New stronger posts assure full current-carrying capacity with maximum voltage at all times. Improved element suspension eliminates possible cover breakage due to weight of battery element.

For big power when you need it—quick, reliable current for longer than a moment—new Gould Stationary Batteries in Plastrite Jars offer long, trouble-free service either full float or cycle operation.

Gould Stationary Batteries in Plastrite Jars are available in Planté, Calcium, or Kathanode. Write for details today, or call your local Gould office listed under "Batteries—Industrial" in the Yellow Pages. Gould-National Batteries, Inc., First National Bank Building, St. Paul 1, Minnesota. In Canada, write to Gould-National Batteries of Canada, Ltd., 1819 Yonge Street, Toronto, Ont.

***More Power to You from* GOULD**

(concluded from page 10)

government-owned radio equipment. It will provide emergency communications support to activities considered most critical.

Planning & carrying out the new system, which is expected to require about three years for completion, is vested in new GSA Office of Telecommunications, set up directly under Deputy GSA Administrator Bernard Boutin. Heading new office is Robert F. Mundy, who worked on development of the 1959-60 plan for Federal Civil Agencies Communication System, closely parallelling the FTS program.

There are no exempted civil government agencies under the program. It is anticipated, however, that certain specialized agency operations, or those with unusual operating requirements, will not be included in initial FTS.

COURT RULES OHIO BELL MUST NOT ADJUST CREDITED SERVICE BY STRIKE TIME . . . . The Mahoning County Court in Ohio has ruled that Ohio Bell Tel. Co. must not deduct from their net credited service the time spent by employes on strike against the company in 1957. The question was taken to court by two members of Communications Workers of America to settle dispute between company & union over application of provision in memorandum of agreement at termination of strike in December, 1957.

They agreed that pending litigation in federal court adjustments in net credited service would be made & then would be rescinded or made permanent by decision of court. But federal courts found they did not have jurisdiction. State court said that final judgment by federal court anticipated by both parties had never been obtained & it concluded by ruling that deductions in net credited service should not be made.

SCOTT, REA CAREER EMPLOYE, BECOMES ASSISTANT ADMINISTRATOR OF AGENCY . . . . John W. Scott, Rural Electrification Administrator career employe who has been with agency since 1936, has been named REA Assistant Administrator, with responsibilities in field of administration, it was announced last month by Administrator Norman M. Clapp.

Scott will be responsible for such areas as program analysis, budget, information services, general services, administrative and loan accounting, & personnel management. He has served in field as an auditor & in Washington in various administrative positions, most recently as Assistant Chief of the Electric Operations Division, in charge of borrowers' accounting.

Pending appointment of an Assistant Administrator — Electric & an Assistant Administrator — Telephone, REA has assigned the responsibilities & functions of these positions to Deputy Administrator Richard A. Dell. The new Deputy Administrator played a major role in developing sound loans & strong cooperatives to bring electric service to farm families in the sparsely settled areas of the northern Great Plains. Later he became head of REA's Applications and Loans Division. He also helped to develop REA's telephone loans program shortly after it was authorized by Congress in late 1949, & served as chief of the Telephone Loans Division. From March 1955 until his appointment as Deputy Administrator, he was on staff of National Rural Electric Cooperative Association as director of that organization's legislative & research department.

McWHORTER RETIRING FROM GEORGIA COMMISSION; KIMBROUGH SUCCESSOR . . . . Matt L. McWhorter, veteran chairman of Georgia Public Service Commission & member of Georgia regulatory agency since 1936, retired from the commission effective April 1. His successor on the Georgia commission is William H. Kimbrough, of Atlanta, who has been serving as chairman of the Georgia Pardon & Parole Board.

PRODUCT DEPENDABILITY *is built into* Phelps Dodge Aerial & Duct Telephone Wire & Cable!

In every Phelps Dodge aerial and duct telephone wire and cable, dependability of product is recognized as the first requirement for satisfactory service.

Phelps Dodge achieves product dependability by combining years of manufacturing experience with the most modern research and development facilities throughout its fabricating process. This controlled method of building in quality *during* manufacture assures customers reduced maintenance costs and trouble-free service—important advantages that only true product dependability makes possible.

Phelps Dodge will gladly help you fill your aerial and duct wire and cable requirements, recommend the correct constructions to fit your needs. Just call your nearest Phelps Dodge sales office.

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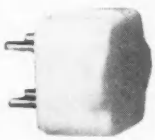
WHAT'S NEW AT SUTTLE

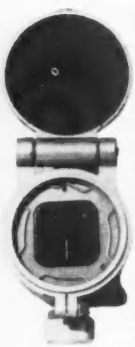
NEW, *LOW* PRICES PLUGS and JACKS!

SE 404B Jack
87¢ in ivory, brown and blue-beige



SE 283B Plug
70¢ in ivory and brown
77¢ in blue-beige

Use of new materials with better quality characteristics allows Suttle to share with you a *much lower price* on industry standard SE 283B Plugs and SE 404B Jacks! Don't overlook this opportunity to reduce your costs! Available from Suttle to all other distributors — NOW!



Outdoor Weatherproof Jack Boosts Revenues!

Subscriber demands for outdoor, back yard, or patio telephone service are growing fast. The SE16151 Outdoor Weatherproof Jack from Suttle fills the bill for every outdoor use. The non-corrosive waterproof aluminum receptacle houses the SE-493A jack (above). This jack makes an excellent extension sale-revenue booster. Another SUTTLE *quality* product at low cost. Order from SUTTLE or your distributor. Price $6.50 ea.

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By L. A. GRITTEN

Withholding Dividends

WHAT will it cost your company to withhold federal taxation from payments of interest and dividends, if the suggested legislation should pass in Congress? In the March issue of *Exchange* (published by New York Stock Exchange) there is an article by L. C. May, treasurer of the American Telephone & Telegraph Company — "The Case Against Withholding Dividends."

A.T. & T., with nearly two million share owners, enjoys magnetic tape share owner records and a large scale electronic computer system. The big company would incur relatively small cost per account in withholding the tax from quarterly dividends. But, Mr. May points out, this is an exceptional case. The great majority of companies are not mechanized to the same extent. Many of them have very little mechanization in this phase of their work. They would bear the burden of extra accounting costs that would total many millions of dollars.

The U. S. Treasury would be saddled with a tremendous burden of refunds. Mr. May estimates that at least 400,000 of the A.T. & T.'s 1,911,000 shareholders are over 65 years of age and "it is certain that a great many thousand have insufficient income to be subject to a tax."

The best time to kill a python, in Congress or elsewhere, is before it is hatched. We suggest that you should protest vociferously to those who serve you in Congress.

In The Mail

AN INTERESTING letter came from Mrs. Fred A. Cartwright, of the Noel Telephone Company, Noel, Missouri, founded in 1915 by the late V. Clyde Cartwright, father of the present owner. She says: ". . . we have run the gamut of service, from magneto switchboards and all rural service 'switches' owned and maintained, to common battery and dial. At one time there were eight individually-owned exchanges in our family. Now there are only two left. . . . Bill #273, soon to come before the Missouri lawmakers, would strip the P.S.C. of all territorial jurisdiction. A real politician's dream and an industrial nightmare."

Boom, Boom

AS THIS is written, our morning paper proclaims: A.T. & T. boom; common stock traded 98,000 shares, closed $127.75; company estimates telephones in service will gain more than 200 per cent in the next 20 years, more than 400 per cent in long distance calls and 2400 per cent in overseas calls.

O. Myers, of Bell Telephone Laboratories, New York says: "The present nationwide telephone numbering plan was expected to last beyond the year 2000, but now it appears that it will be outgrown by about 1975."

But what is this? The National Planning Association says that *chronic* unemployment in U. S. went from 500,000 in the third quarter of 1953 to about 2,000,000 in the first quarter of 1960. The TOTAL unemployed now numbers about 7,000,000. "To reduce unemployment and underemployment within a year, to four per cent of the labor force, would require some 7,000,000 new job opportunities, a gigantic challenge."

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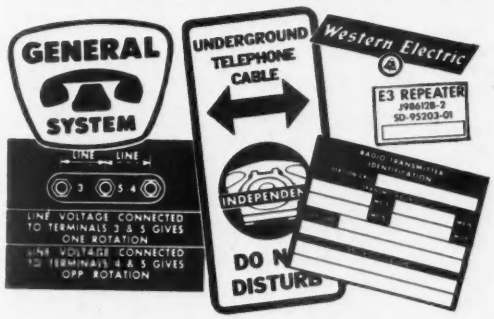

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2174A	300 Cycles to 400 Kilocycles	50 Cycle or 100 Cycle Filter*	−68 to +32dbm	± .5db −80 to +32dbm 300 to 400 Kilocycles	**50 CYCLE FILTER**** 6db— 60 Cycles 60db—450 Cycles
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smells suspiciously like 1929. Are we fulfilling the dire prophesies of the Technocrats — or is it merely a little bearing friction in a boom that will make all previous progression look like a snail's crawl?

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OIL billionaire Paul Getty has installed a coinbox paystation telephone for his guests in Sutton Place, his luxurious country home in England. Too many toll calls were making a dent in one of the Texan's millions.

Fair enough! Why should not we, in similar fashion, assist our residence telephone subscribers in this country, those whose guests and visitors callously run up their long distance bills? Surely they are entitled to our protection. There must be at least five million American prospects for such residence pay-station service. Our sales slogan: "What's good for Getty is good to get."

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IN HULL, England the young parent who lacks imagination merely dials 211. Then the telephone company provides an original three and one-half minute tape-recorded bedtime story, new and different every night.

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THE INDIANA Telephone Association has a system of awards for outstanding acts of public service beyond the call of duty performed by telephone employes within the State of Indiana." Seven such awards have been made since the plan was started in 1959.

We should like to hear from other Independents who make similar recognition of outstanding service. General cognizance of such incidents is desirable ethically; and it makes for good public relations.

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The Following Articles Will Appear In This Important Issue

"THE BUSINESS CUSTOMER'S REACTION TO A PLANNED SALES APPROACH," by F. Blaine Ward, Director of Sales, General Telephone & Electronics Corp., New York, N. Y.

This exclusive TE&M article sets forth the reasons why General Telephone embarked upon its planned approach to sales, outlines certain market studies, and deals generally with the business customer's situation in relation to his total communications requirements. The article describes: (1) procedures developed and presently used by Gen Tel in connection with the identification and classification of business customer market — this includes sales productivity objectives and planned market coverage procedures; (2) General Telephone's sales personnel, including what a well qualified and adequately trained professional communications salesman must do, and what he must know to successfully discharge his responsibilities to the customer, the company, and himself; (3) the customer's reaction to the planned sales approach; and (4) the results of General's sales program in terms of sales productivity and increased revenues — these results will also be interpreted into understandable comparative terms that should be of considerable interest to the industry.

"HOW YOU GONNA SELL THEM DOWN ON THE FARM?" by Forrest J. Eherenman, General Commercial Supervisor, United Telephone Co. of Indiana, Inc., Warsaw, Ind.

Rural Subscribers represent a virtually untapped market for extension telephones, bells, horns, intercom systems, color instruments, extra listings, and up-grades in service, and this article suggests "it's up to the telephone industry to hit the trail, equip our huckster wagons and visit Farmer Brown where he lives . . ."

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"SELL MORE — EARN MORE," by John G. Reynolds, Editor of "Telephone Engineer & Management."

This special TE&M Report describes by text and illustrations the many telephone equipment items that have proved popular with telephone subscribers, and have helped the nation's telephone companies "Sell More" and "Earn More." Prepared from exclusive data obtained from telephone equipment manufacturers, this article accomplishes three goals: (1) it presents a complete pictorial introduction to today's most popular revenue boosters; (2) it presents case history reports of telephone company sales activities that have produced outstanding results; and (3) it presents a complete guide to available information that will help a telephone company do a better job of selling new and additional services.

"THE PLANT MAN'S PART IN THE MARKETING PROGRAM," by John S. Reed, Lincoln (Neb.) Telephone & Telegraph Co.

Today, the plant man's part in the merchandising program has been recognized. Plant workers, particularly those who install telephones and other types of communication equipment, are in almost constant contact with the public. The average installer meets from four to six subscribers daily. From his experience and his many varied contacts, he can visualize the needs for the various types and grades of telephone service, and can make effective sales contacts for services such as extensions and colored telephones. Plant workers, who are diffident about selling telephones, can be encouraged through suitable training and promotional efforts to put efforts into their sales contacts. This article tells how the job can be done.

"THE SMALL COMPANY'S MARKETING JOB," by Bill Corman, Manager, Southland Telephone Co., Atmore, Ala.

Telephone marketing does not stop at the city limits of the big city served by a large telephone company. Today, the small company, with its dial equipment and subscribers who want and are able to pay for more and better telephone service, are finding that the marketing programs that produce added revenues for the large company work equally as well for the small company. This article tells "why" and "how."

"BOOST REVENUES WITH BOOTHS & PAY STATIONS," by C. D. Ehinger, President, Citizens Telephone Co., Decatur, Ind.

Statistics show that the average man, in his lifetime, spends 8,760 hours telephoning — the equivalent of one full year. And if the result-producing ideas presented by this article are followed, man's use of the telephone — particularly at locations away from home and business — may very well increase.

"THE TRAFFIC DEPARTMENT CAN HELP YOUR MERCHANDISING PROGRAM," by D. A. Perigo, General Traffic Supt., West Coast Telephone Co., Everett, Wash.

The experienced marketing manager knows the true value of leads, and this article points to a ready source of good leads — the Traffic Department that is set up to (1) furnish leads for additional directory listings, (2) tie in Service Advisor visits to PBX's, and (3) show need for upgrades or additional lines.

"BOOSTING DIRECTORY REVENUES," by Allan R. Stacey, Vice President, Sunland-Tujunga Telephone Co., Sunland, Calif.

Today's modern telephone directory is not only a guide to the names, addresses, and telephone numbers of a town's telephone subscribers — it is a convenient guide to products and services, used by millions of shoppers. This article tells how a telephone company can boost its revenues by doing a better job of selling additional listings and building up the Yellow Page section, and making the directory a complete guide to the products and services offered by the local merchants and national organizations having representatives in the telephone company's exchange area.

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FCC Claims AT&T Misinterprets "Telpak" Tariff

AT&T DEFINES "TELPAK" CHANNEL

FCC concludes that the American Telephone & Telegraph Co. is misinterpreting its "Telpak" tariff when it provides the services over a diversity of routes or facilities . . . . U. S. Air Force anticipates additional participation in telephone rate proceedings involving SAGE systems.

By ROLAND DAVIES and FRED HENCK

THE FEDERAL Communications Commission has concluded that the American Telephone & Telegraph Co. is misinterpreting its Telpak tariff when it provides the service over a diversity of routes or facilities, rather than supplying one broadband channel from which the appropriate number of communication circuits are derived.

In mid-April, the Commission issued an opinion and order directing AT&T not to apply its tariff in that manner, and ordering it to notify the Commission within 10 days of the steps it has taken to obtain compliance with its tariff and the FCC order.

There was no immediate indication of what the next step would be. In earlier correspondence, reported in this column, the FCC wrote to AT&T raising a question about the propriety of Telpak service provided over a variety of facilities rather than a single broadband channel, and AT&T responded that it interpreted its tariff as permitting the former procedure.

The day before the FCC took its action, AT&T filed a tariff amendment, to become effective on 30 days' notice May 12, specifying that "A Telpak channel or derived channels may be furnished by such physical facility arrangements appropriate for the forms of communication specified as the telephone company may elect for efficient utilization of available physical facilities, whether or not in the form of a single carrier spectrum assignment and whether or not the entire Telpak channel or all derived channels are on the same physical facility."

In its order, the FCC "noted" the new tariff filing, but pointed out that it is subject to suspension if the Commission "should determine that the tariff as amended gives rise to questions of justness and reasonableness." The question of application of the tariff, in addition, would apply for the Feb. 16-May 12 period if the tariff change becomes effective, the FCC added.

Although the Commission's order was devoted principally to the question of interpretation of the Telpak tariff as originally filed, the FCC did have some comments about the practice of providing Telpak service via a diversity of channels, even if it were in conformity with the tariff.

The Commission took the position that if Telpak channels are not derived from a single broadband channel, "the individual channels furnished are indistinguishable from those furnished" under the various other private line service tariffs — telephone, teletypewriter, telephotograph, and data transmission.

"Thus, under the interpretation advocated by AT&T," the Commission declared, "there would be in effect different rates applicable to like communication service, giving rise to questions as to the lawfulness of such rates under the provisions of section 202(a) of the Communications Act" — dealing with unreasonable or unlawful discrimination.

"Such an interpretation would also give rise to questions as to whether the generally much lower Telpak rates are compensatory in light of the cost of furnishing the service contemplated by the other private line tariffs."

SAGE Installations

AS THE installation of facilities for the SAGE system of air defense moves more and more into the territories of Independent telephone companies, the U. S. Air Force is anticipating additional participation in telephone rate proceedings before the state regulatory commissions during the coming year, Air Force officials have indicated.

GSA, acting for the Air Force in hearings related to SAGE services, has already asked six state commissions to rule that 112A key equipment is an integral part of the interstate SAGE system and thus should be part of the tariffs filed with the FCC for this defense work.

Telephone companies view the 112A key equipment as a separate instrastate arrangement. Tariffs covering it have been filed by Bell System companies in Maine, Minnesota, North Dakota, Nevada, and California, and by the Pacific Power & Light Co. in Montana, where it provides telephone service to a SAGE facility.

The Air Force expects that the same issue will arise in at least another 20 areas this year and intends to oppose such filings.

The filings have been opposed in the six states by GSA, which argues that the equipment "was designed" for SAGE and thus should be under FCC jurisdiction. While the Maine application was the first one filed, at this writing the issue had advanced to the hearing stage only in California.

GSA has also filed an affidavit with the FCC asking the regulatory agency to issue a declaratory ruling that all SAGE rates are interstate and subject to FCC jurisdiction. The filing has been opposed by the American Telephone & Telegraph Co. on the basis that various components included in the term "SAGE internal equipment" are used solely for intrastate communications.

Pending what the Air Force and GSA consider will be a landmark decision in one of the states, both anticipate a rise in filings during the coming months because SAGE installations are now being made in territories of Independent companies and, they say, these firms will be inclined to consider the 112A key and other SAGE services as an intrastate tariff offering.

The aim of the Air Force, it was pointed out, is to get the state commissions to find they have no regulatory authority over anything doing with the SAGE system. Arkansas officials have raised a question as to whether that state has the jurisdiction to regulate rates for the federal government.

Small Independent companies in two other states — the Churchill County Telephone Co. in Nevada and the Western Waihikum Co. in Washington — have filed tariffs with the state commissions covering equipment for SAGE already decided upon by the FCC, an Air Force spokesman stated.

In addition to matters involving SAGE, it was said that increased rate activity by the Air Force is expected involving other questions of rates for special services.

The Air Force, pointing to another phase of its work dealing with telephone rates, said that in cases involving 620 proposals by companies during the period January, 1958, to April, 1960, it has negotiated reductions resulting in a net annual savings of $3,300,558 to the government. The original proposals totaled $74,961,816 in annual recurring charges, and after negotiation the total was $71,893,258, the Air Force said.

Automation

AUTOMATION has resulted in improvements in the nature of the work performed by telephone industry employes, but recently there have been "disturbing indications" concerning force displacements as an outgrowth of technological advancements, Joseph A. Beirne, President of the Communications Workers of America, has told a House Labor subcommittee which is looking into the unemployment problem and the impact of automation.

Touching briefly on some union studies which have demonstrated some "overall benefits" from automation — which Mr. Beirne had discussed last December in a speech at the University of Tennessee — the CWA President states that "Information only recently available to us indicates that telephone people, for the most part, are in higher paying, higher rated jobs today, relatively speaking, than 15 years ago. Many of the jobs today are cleaner, safer and less physically demanding than previously."

But, he added, "Recently, there have been very disturbing indications that in some areas layoffs either have been effected or may be resorted to in the near future. Presumably, in these areas at least, the steady increase in productivity per worker resulting from improved technology has been greater than the ever-increasing volume of telephone business.

"What these signs portend for the future is difficult to determine at this point," Mr. Beirne continued. "Undoubtedly, the trend of the economy generally in the next few months will influence, to a considerable degree, what happens to employment levels in the telephone industry — for this industry, perhaps more than any other, is a reliable barometer of the state of the economy and the direction in which it is headed."

A measure of the effects of automation is demonstrated, Mr. Beirne said, by information gathered by the union which shows that "in the Bell System since 1955, the use of telephone service (as measured by daily telephone conversations) has increased 29.6% and the number of telephones has increased 31.4%. Employment, however, during the same period in the operating companies of the Bell System decreased 6.2%. There is little indication that the picture will change in the years ahead.

"The advantage to management of automation and its resulting productivity gains are evidenced by the fact that from 1950 through 1960, the profits per employe earned by the Bell System including its manufacturing division, increased from $596 to $1700 annually, almost triple."

— *Roland Davies & Fred Henck.*

A TELEPHONE ENGINEER AND MANAGEMENT REPORT ON

PROTECTION

Let's Look At Telephone Protection Practices

CHAPTER ONE OF A NEW TE&M REPORT

FAMILIARITY with telephone protection requirements is one thing; understanding these requirements is another thing. How much should one be expected to know about protection standards? Where are conventional sources of authentic, up-to-date information on essential protection practices? Here are the answers you have been looking for.

By T. DeWITT TALMAGE

REGARDLESS of anything the imaginative Russian historians may dream up to say to the contrary, it was in the United States just a few more than 31,000 days ago, on March 10, 1876, to be exact, that the telephone carried its first intelligible sentence. Anyone who thoughtfully reads the inspiring accounts of this momentous event cannot help but be impressed, if not amazed, at the patience, at the skill, and especially at the ingenuity that was required to bring this development to a successful conclusion. [1, 2]

There are at least two other outstanding examples of man's ingenuity and versatility that have been influential in shaping the present-day pattern of communication plant facilities. One of these technical achievements occurred considerably *before*, and the other shortly *after*, the invention of the telephone. Even today the results of these two other key historic events are of sufficient significance to warrant — by way of review — a brief mention of them at this point.

In chronological order, the oldest of these two electrical developments occurred when mankind was furnished the first definite proof by an extremely versatile man, Benjamin Franklin, that lightning and electricity were one and the same thing. Thus, Benjamin Franklin, an outstanding example of a man who did many things well, proved the theory that lightning is electricity and thereby explained one of nature's greatest phenomena which had mystified people from earliest times.

Was the outcome of Benjamin Franklin's discovery of any practical interest and benefit to the telephone industry?

Yes, from a safety standpoint, it certainly was because the protection of telephone users, telephone company workers, and telephone plant facilities from the destructive, injurious, and sometimes fatal effects of lightning has been a matter of continuous concern and action from the very beginning of the telephone industry.

The second event that substantially affected telephone facility engineering, construction, and operating standards was the development and steady extension of the idea of supplying electric power to the public from a central generating station by means of electric power

[1] *Refer to Chapter II entitled: Alexander Graham Bell: The Invention of the Telephone and Its Reduction to Practice," of the authoritative book "Beginnings of Telephony," by Frederick L. Rhodes. Published in* 1929 *by Harper & Brothers, 49 East 33rd Street, New York* 16, *N. Y.*

[2] *Read the firsthand account included in Chapter IX of the interesting book, "Exploring Life. The Autobiography of Thomas A. Watson." Published in* 1926 *by D. Appleton & Co., now Appleton-Cenury-Crofts, Inc., 35 West 32nd Street, New York* 1, *N. Y.*

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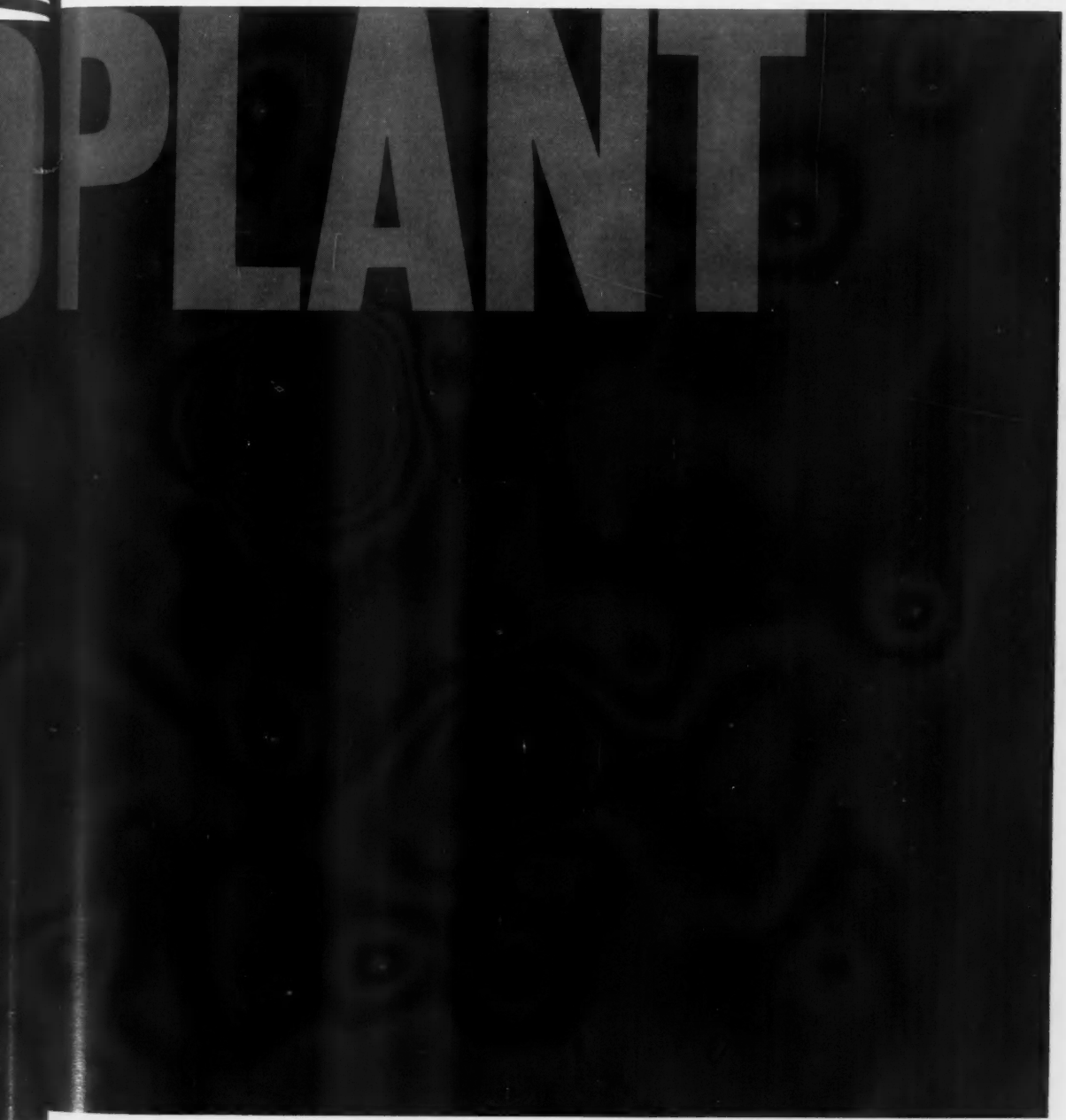

transmission and distribution lines. This started in the decade immediately following Alexander Graham Bell's invention of the telephone and is still going on.

Of course electric power companies, like communication companies, take carefully planned precautions to protect their customers, employes, and facilities from lightning's destructiveness. Moreover, in inductive interference situations, the design and operation of both electric power and communication facilities must be scientifically co-ordinated with each other to obtain the most satisfactory over-all service results.

Safety Of People Is Paramount

IT IS GENERALLY known throughout the public utility field that the widespread inductive co-ordination problem has been extensively studied. The writer was privileged to participate in one such joint research and development project. Out of these studies, tests, and deliberations came agreements on the establishment of certain "Principles and Practices" that are generally accepted guides for the orderly mutual conduct and co-operative action of both power and communication wire-using organizations in which the over-all interests and welfare of the utility-service-using public are protected.[3]

LIMBS DOWN AFTER STORMS
HOT, CHARRED OR SMOKING POLE
Here are the Trade Marks of a killer-
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BURNED OFF DROP WIRES
LINE AND STATION PROTECTORS OPERATED
C.O. HEAT COILS AND CARBON BLOCKS OPERATED
POWER WIRE DOWN
M-M-M
HUM ON CIRCUITS AT TEST DESK

Close co-operation between power and communication companies is not limited to just reducing adverse inductive interference effects. It, of necessity, goes further. General co-ordination of the location, construction, and operation of power and communication facilities, including protective arrangements *required to reduce hazards to life as far as practicable*, are matters specified by various public utility regulatory bodies or by state law. Prevention of overhead and underground utility plant conflicts and reduction of accidental electrical contacts between the two systems are some of the worthy objectives behind the existence of the minimum-strength-and-separation-requirement rules for the construction of electric power and communication lines. More will be said about this basic subject later in this article, because familiarity with these rules is not a matter of choice — it is required of those who are expected to live and let live.

Therefore, it is fair to state that the *main* reason that comprehensive engineering and adherence to good operating practices is required at all times is that safety of people demands it.

Next in importance are the economic and legal reasons supporting such goals as: (1) minimizing the likelihood of damage to a telephone customer's property; (2) limiting damage to telephone lines and equipment; and (3) minimizing interferences and interruptions to telephone service.

Much has happened during the past 31,000 days since the inception of telephone service. Based on the results of experience and new discoveries, changes in concepts and improvements in techniques have been encountered in every phase of the telephone business. Fortunately, telephone plant protection practices have kept pace with other telephone advancements.

The entire subject of protection is a broad one. There are, consequently, several choices of suitable places to start this discussion. Because this is a subject that can become a matter of life or death, a logical place to start — that should interest each reader — is how you can stay alive on the job — and off the job, too.

Emphasis will be placed throughout this review of currently important phases of protection milestones on specifying the original and the official sources from which factual, up-to-date protection data may be easily

Please turn to page 60

[3] "*Inductive Coordination of Electric Power and Communication Circuits*," *by Laurence Jay Corbett.* 161 *pp. Published in* 1936 *by J. H. Neblett Pressroom, Ltd., 500 Sansome St., San Francisco, Calif. Price* $1.75.

A TELEPHONE ENGINEER AND MANAGEMENT

REPORT

ON TERRAIN PROFILING

Radar Terrain Profiling of Communication Paths

NEW TECHNIQUE FOR ENGINEERS

The aerial radar terrain profiling technique speeds up the process of path surveilance for the pre-selection of paths over which the communications network is to operate, and reduces the percentage of rejected sites.

By W. C. EDDY, Captain USN (Ret.)*

THE development of new high performance communication networks has become one of the major problems facing today's technology. Without reliable communications, the ability to plan ahead or even bring projects to completion within an overall plan is reduced to an inacceptable minimum.

Electronic advances have now provided us with many new and important techniques over those that were available a decade ago. Principal among these are the facilities provided by scatter and microwave networks which today have proved capable of handling the quantity and diversity of traffic normally required by the communications engineer. Microwave, especially, because of its proven dependability and capacity, as well as its adaptability to complex distribution networks, merits full consideration in any communication planning.

Even though the electronic capabilities of a microwave network can be pre-selected from proven data and tested equipment made available from stock, there remains the ever present and all important problem of field design and construction that must be accomplished before the system can be put to useful work.

One of the more basic and probably the most important of these field problems lies in the pre-selection of the paths over which the network is to operate.

Microwave systems, as we all know, operate over a quasi-optical range in which the transmitting reflector of one station is within electrical vision of the reflector on the receiver. This basic requirement, therefore, demands that the site for both receiver and transmitter be so selected that the interposing terrain will not obstruct the path of radiation between the two stations.

It is further required that the station sites, that have been selected on a purely electronic capability basis, be accessible by ground in order that the subsequent construction, maintenance and servicing functions can be carried out.

Sometimes these two criteria cannot be satisfied in one site selection, requiring either a compromise or a rejection, plus a second survey by the engineer.

Any means of speeding up this process of path surveillance and reducing the percentage of rejected sites due to one cause or another is a welcome addition to the technique of the communication engineer.

For this reason, the development of the Aerial Radar Terrain Profiling technique by Television Associates of Indiana, Inc., merits more than casual interest by the engineer charged with the economical design and subsequent operation of a network.

The apparatus and techniques used by the company in the practice of this unique surveying practice is proof that, "necessity is many times the mother of invention."

Recognizing that the microwave signal must travel in a straight line between transmitter and receiver, only an

Captain Eddy is president of Television Associates of Indiana, Inc., Michigan City, Ind.

airborne system, not subject to the detours and access problems of a ground survey team, seemed practical. Thus, the low flying airplane was selected as the moving observation platform from which vertical measurement could be made.

Having determined this basic criterion, there remained several possible techniques that could be used in determining the vertical separation of the terrain and the observing aircraft. The use of vertical radar appeared the most practical, inasmuch as its sensing was continuous, its interpretation accurate and its operation not subject to low visibility or dependent on ground reference points.

Translating The Data

WITH these two elements satisfied, electronic means were then adopted to translate the collected data into an instantaneous display graph.

The theory behind the resultant instrumentation is relatively simple. If one is to measure the elevation of an observed sample of terrain by computing the distance between ground and an elevated observation platform, it is necessary that the true altitude of this observing plane be accurately determined at the instant of measurement. Such a requirement is obviously well beyond the capabilities of a pilot equipped with standard altimetry.

A solution, however, was found in substituting a pressure operated strain gauge (borrowed from missile technology) as the datum reference instrument.

This particular device was capable of translating the true altitude of the plane above mean sea level into a D. C. voltage rather than the normal visual display and, because of the increased sensitivity to vertical movement of the plane obtained by this substitution of electronics for the impedance producing gear trains of the standard altimeter, could produce a polarized voltage representative of the plane's altitude at the instant of measurement. The output of the radar itself producing a similar voltage representation of the distance between plane and ground is reversed in polarization to the voltage output of the altimeter.

SUBMIT YOUR PROBLEMS

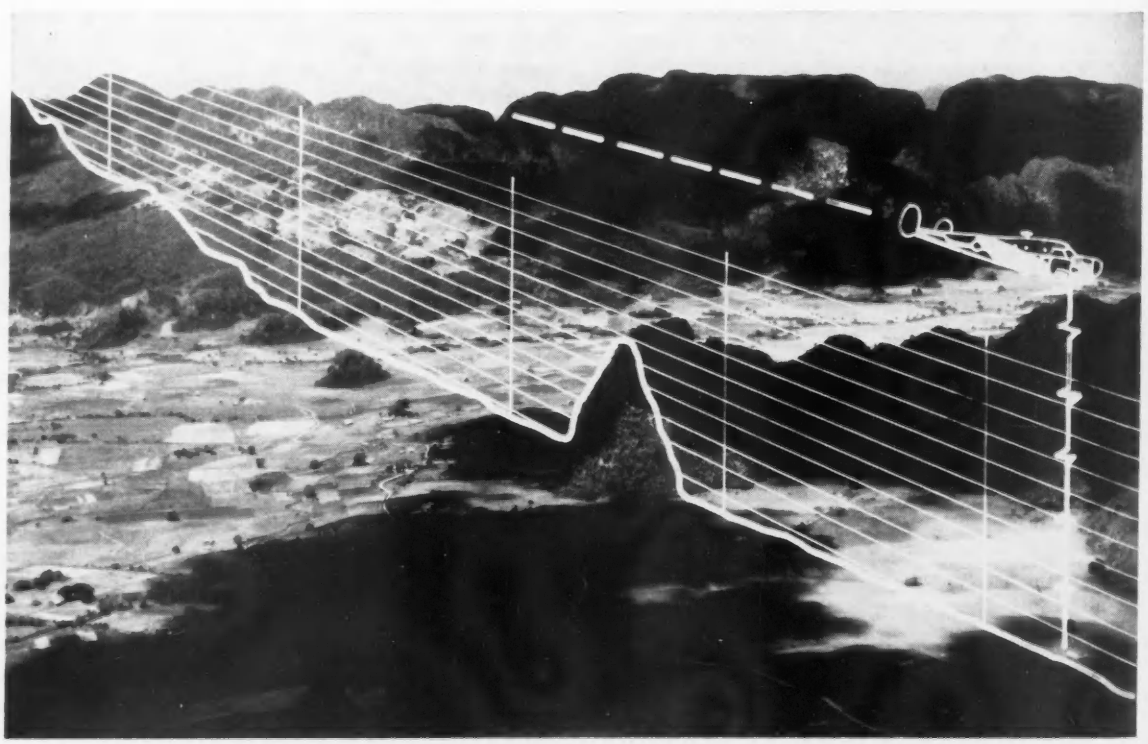
You are invited . . . to tell TE&M authors your problems of department policy or procedure on which you'd like to have an opinion.

While we don't claim to have all the answers, we'll welcome the opportunity to discuss as many as possible in our columns.

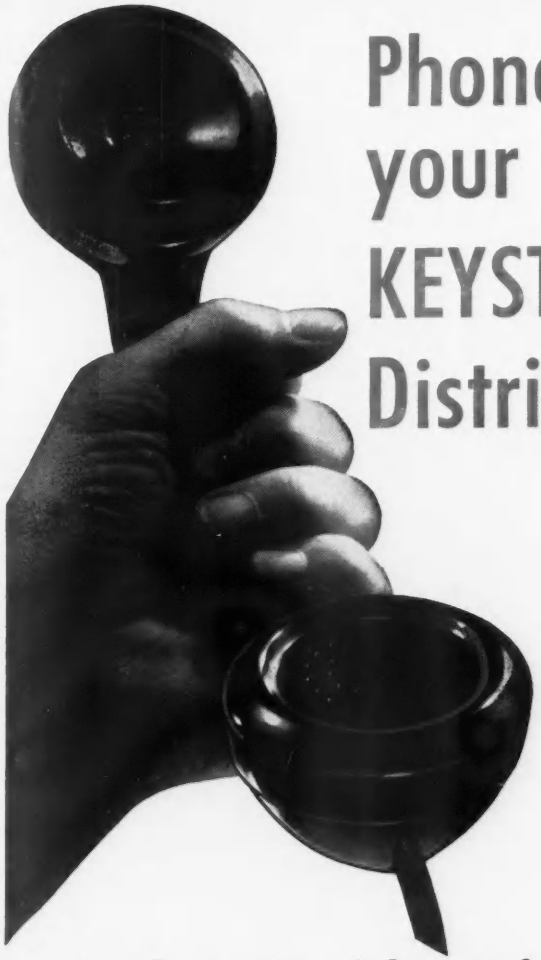
By combining these two opposed voltages in a computer circuit and introducing the resultant voltage on an XY moving chart recorder, an instantaneous graphic analysis of the terrain is automatically created.

Because both of these controlling voltages are separate and distinct, it is obvious that any vertical movement of the airplane is immediately compensated by an indicated change in distance to the ground thus permitting the pilot considerable latitude in the maneuvering of his plane without affecting the end result.

One of the unique requirements of this type of surveying, resulting from the conical pattern radiated by the radar unit, is that the elevation of the observation plat-



Actual terrain photograph with plane and graph overlay to depict the terrain as shown on the recorder inside the plane.



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HOME INTERPHONE. Now families can enjoy a home communications system that uses telephones. They can talk from room to room, call people to the phone, summon everyone to supper — things they may have to do now by shouting or walking. Near each phone in the home is a speaker which broadcasts the caller's voice. The person called can answer hands-free because a microphone in the phone's base picks up replies

HOME
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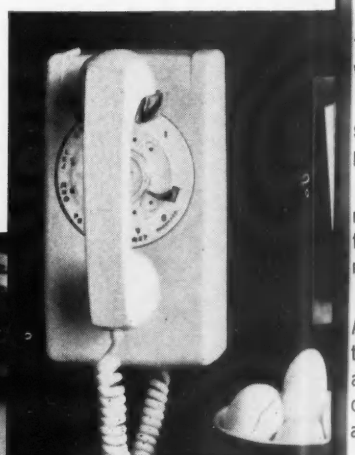
The Bell System's Spring Phone Fair Fe

PRINCESS PHONE. It's little, it's lovely, it lights! The new Princess is small to save space, and styled with modern grace. The dial glows in the dark so it can be found quickly and, when the receiver is lifted, it lights up brightly to make dialing easy. Choice of five colors.

HANDY WALL PHONE. The busy, active rooms in a home are natural locations for this extension — the kitchen, a basement workshop, a family room.

PHONES IN DECORATOR COLORS. Not only can extension phones give convenience and comfort, but in color they can add new beauty to any room.



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HOME INTERPHONE lets them answer the door, too, from the nearest extension. When the doorbell rings, and they are alone in the house, or ill, or dressing, they can find out their visitor's business safely, easily and without embarrassment. Just pick up a phone, push a button, and talk. Mounted by the door is a small microphone-speaker unit which broadcasts their voice, and carries their visitor's reply to the phone they are holding.

Features a World of New Services!

Modern living can be gay as a spring fair with the help of the world of convenient, new telephone services.

That's why the Bell System has chosen the "Spring Phone Fair" theme to promote these new services this month.

In Life, Post, Look, and nine other major magazines, bright and exciting full-color ads will feature many of the most popular new telephone services.

These ads will invite millions of Americans in all sections of our nation to visit their telephone business offices and view what's new in home communications. Many of these new services are shown on these pages.

We feel that the "Spring Phone Fair" —and other promotions like it—perform two important services for all telephone companies.

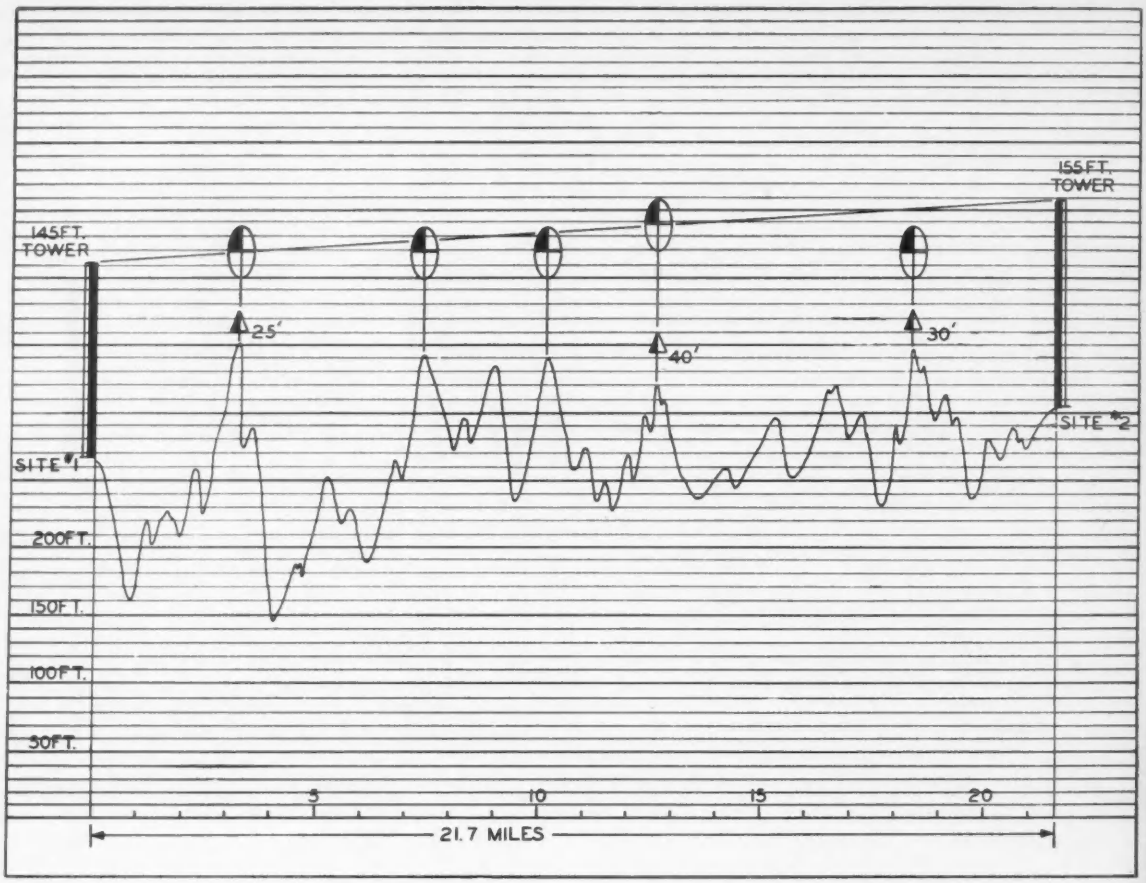
First, they sell new telephone services.

Secondly, they show the public how telephone companies are constantly striving to make modern life easier and more effortless through improved communications.

We expect that our "Spring Phone Fair" will create great interest in both Bell System and independent telephone company communications. And this interest will turn into greater sales and respect for your telephone company, too.

BELL CHIME. Centrally located in a home, it announces calls for all extensions with a pleasant chime. It can also be set for a louder bell, or the familiar ring. In soft gold or ivory finish.

TELEPHONE SYSTEM



A finished profile with tower heights computed. Terrain appears exaggerated as 21.7 miles have been compressed into approximtely eight inches for report purposes.

form increases the area of the terrain that will be integrated and read into the rebound signal. Inasmuch as microwave technology requires only knowledge of an area approximating the finite path between terminals, practical survey flight altitudes are restricted to little more than tree top level. At this elevation, only an area on the ground, similar to that which will be transited by the microwave beam of the completed system, will be measured and recorded.

This tree hopping technique adds zest if not safety to this practice of profiling from the air. To the moonshiner deep in the Ozarks, the appearance of the survey plane signifies the arrival of "revenuers;" to the lonely deer hunter, it presents a most attractive target to test his ability to lead game.

Luckily for the safety record of Television Associates, this ground "straffing" has been both intermittent and inaccurate. Not so, however, are the inherent and ever-present dangers of the limitless deserts and high mountain passes of Iran, Turkey and Pakistan or the rain forests and jungles of Southeast Asia and South America where these survey techniques find important markets.

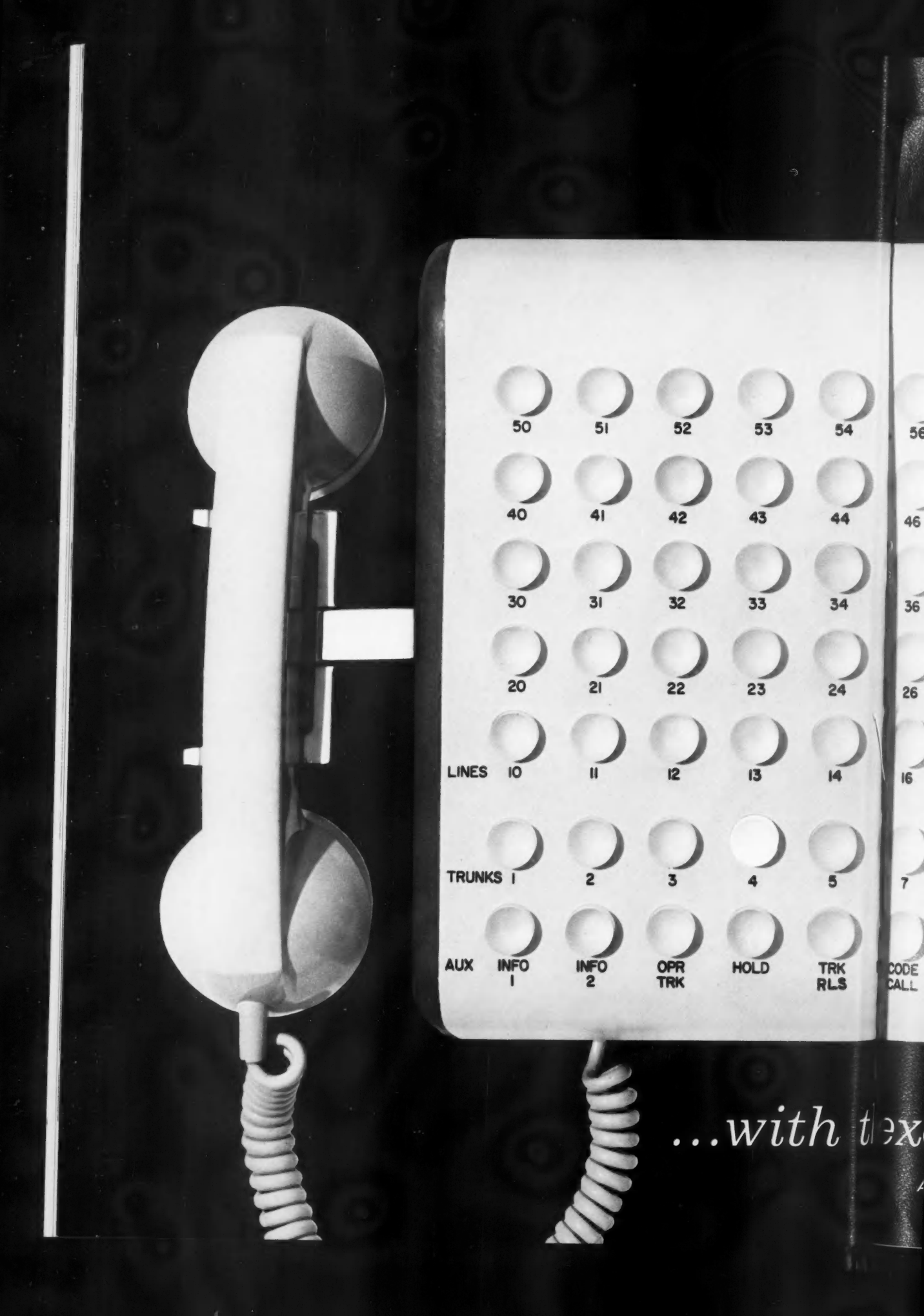
Television Associates of Indiana, Inc., as the prime contractor for the survey and design of the major communication links in the Near East and in Southeast Asia,

Terrain between Rio de Janiero and Brazilia, Brazil.

has to date flown many thousands of miles over territory that defies description. But, even when the going is the roughest with the last possible alternate landing field well beyond the point of no return, the comparison between the rigors of this type of surveying with that

Please turn to page 39

ntroducing the exciting new
F50
Stromberg-Carlson® Dial PBX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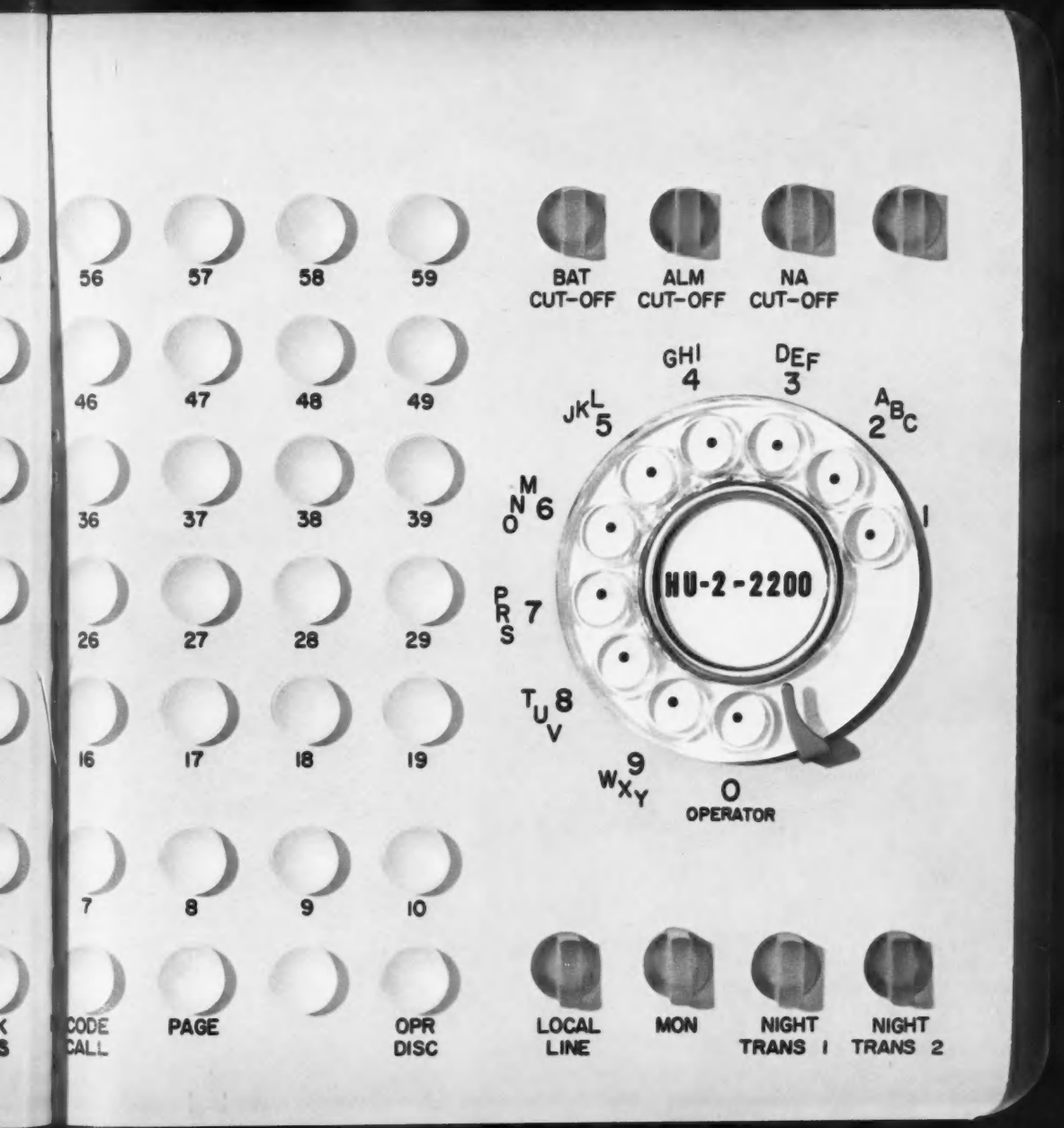
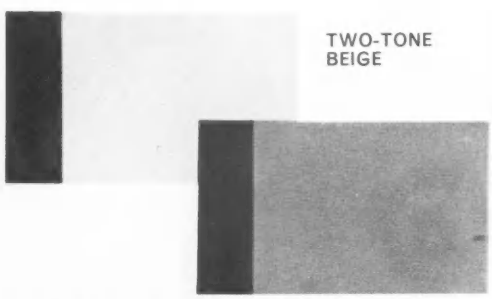


t exclusive "Touch-Lite" Turret

AND 32 FEATURES YOUR CUSTOMERS WANT MOST



TWO-TONE
BEIGE

TWO-TONE
GREEN

TWO-TONE
GREY

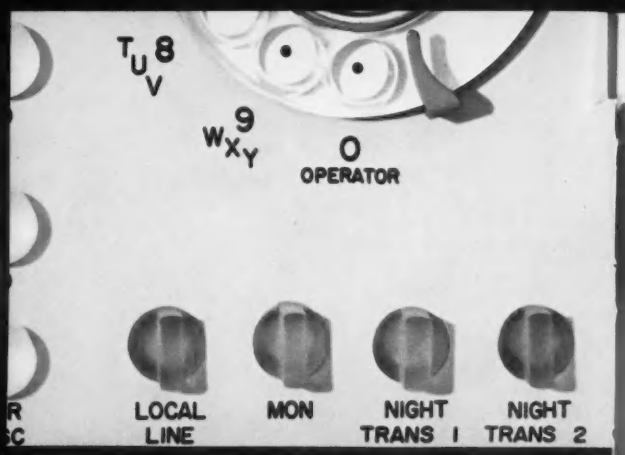
F50

"Touch-Lite" Turret

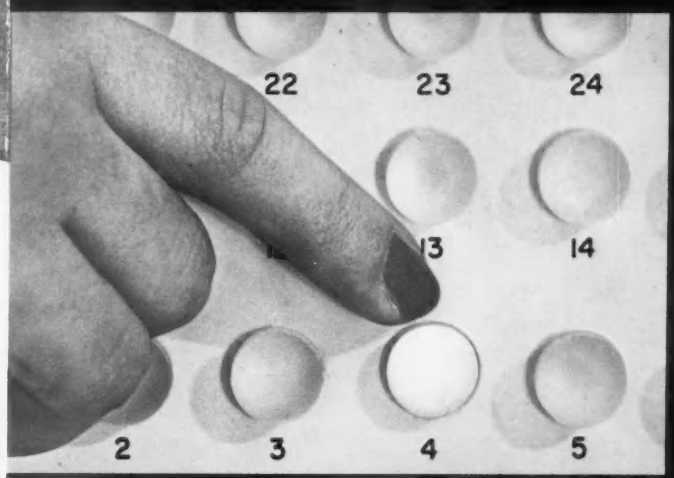
SPECIFICATIONS

1. Two-tone metal cabinet.
2. Compact size 9″ x 15″ x (5″ high sloping to 2½″)
3. Contoured "Touch-Lite" translucent keys.
4. "Twist-Lite" auxiliary keys.
5. Call transfer . . . single touch operation.
6. Lamps replaceable from face side.
7. Modular key strip construction.
8. Completely wired, including 85-pair cable.
9. Cable entrance either side.
10. Dial mounted "right" side.
11. Provision for operator's headset.
12. Standard 1500 Telephone handset.
13. Soft-pull retractile cord.
14. Non-skid rubber feet.

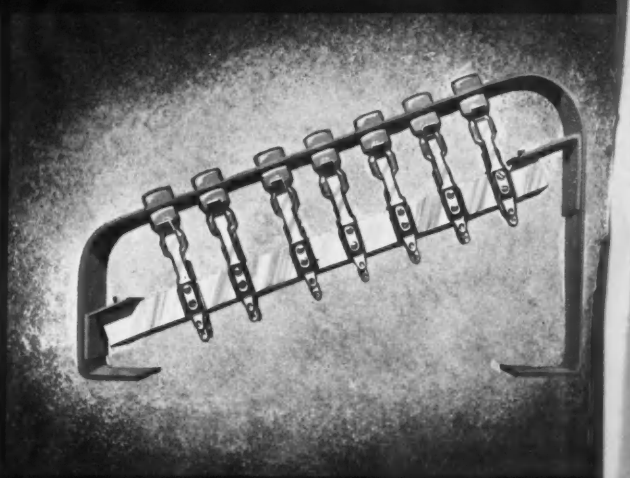
Low profile turret . . . cable can enter from either side . . . provision for operator's headset if desired.



Dial located on right side of turret for greatest ease . . . twist keys also illuminated type . . . extended dial number plate.



"Touch-Lite" Turret features single-touch operation throughout . . . keys light up at a feather-light touch.



Modular design of mounting keys and lamps simplifies maintenance . . . lamps can be removed from face side of cabinet

features designed to serve the most exacting customers:

1. Busy Line Indication
2. Camp-on Busy
3. Attendant's Busy Over-ride
4. Consultation and Call Transfer
5. Night Transfer
6. Auxiliary Over-flow Link
7. Restricted Service
8. Executive Right-of-way
9. Optional Trunk Block Release
10. Power Failure Cut-thru
11. Instrument Push-button Control
12. Code Call
13. Conference
14. Paging
15. Station Answer of Trunk Calls
16. Multiple Trunk Groups
17. Tie Lines
18. Toll Restrictor (optional)
19. Release of Links on Trunk Calls
20. Trunk Splitting

...and here's the Stromberg-Carlson bonus of 12 more PLUS features!

1. "Touch-Lite" Turret
2. 1200 Ohms Subscriber Line Loop
3. All Equipment in one Cabinet
4. Full Rotation of Links and Trunk
5. Compact Cabinet (6'4" x 4'1" x 2' only 8¼ square feet of floor spac
6. Sound-Proof Cabinet
7. Mobile Cabinet has Locking Casters
8. Single-Touch Incoming Call Extension
9. Peg Count and ATB Meters
10. Standard Circuit Drawings
11. Standard "0" Level Information Trunks
12. Controlled Executive Right-of-wa

GENERAL DYNAMICS | ELECTRONICS

T-2045/8M/461/GL

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...here is tomorrow's Dial PBX to-day!

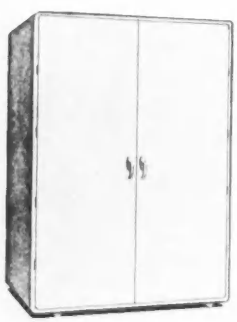
available from stock...ORDER NOW

The new Stromberg-Carlson F-50 XY® PBX—features the exclusive "Touch-Lite" Turret. Transfer and supervision of calls are accomplished by merely touching translucent keys which illuminate. "Touch-Lite" Turret is a two-tone metal cabinet (9″ x 15″ x 5″), engineered, styled and equipped to meet the demands of modern business communication. Capacity is 50 lines, 10 trunks, 6 links. It has the 20 most desirable features a PBX can have—*plus a dozen more.* The F-50 with "Touch-Lite" Turret adds up to the greatest PBX value today.

The dial is on the right-hand side for operator ease and convenience. The turret is delivered fully equipped, completely wired . . . with cable attached.

The equipment unit of the standard F-50 system is a trim, compact, sound-proofed office-type cabinet. It's mobile—rolls easily to any convenient spot. Power supply is self-contained.

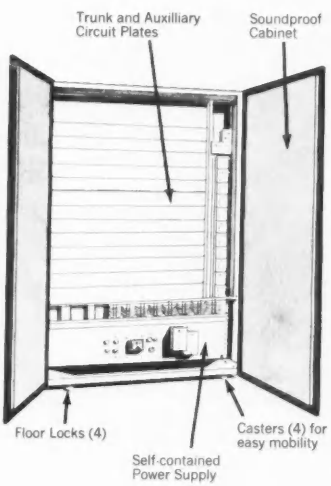
The complete story is in the hands of your Stromberg-Carlson representative. Call him now for technical data, prices, ordering information and selling aids. In Atlanta, call: 875-7467; Chicago: STate 2-4235; Kansas City: HArrison 1-6618; Rochester: HUbbard 2-2200; San Francisco: OXford 7-3630.

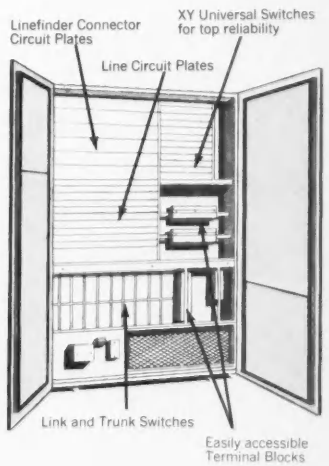


F50

switching equipment cabinet: XY reliability

All the necessary switching and power equipment for the F-50 system are contained in this trim, compact, mobile cabinet. Attractively styled in modern office gray, the cabinet can be placed in any convenient location. Takes very little floor space. Dimensions: 6′4″ high; 4′1″ wide; 2′ deep.




Linefinder Connector Circuit Plates
XY Universal Switches for top reliability
Line Circuit Plates
Link and Trunk Switches
Easily accessible Terminal Blocks

"Radar Terrain Profiling"

(Continued from page 32)

which might be encountered by a ground party in the same area, makes Aerial Radar Profiling seem a most leisurely occupation.

As in all fields of engineering, there are humorous interludes reported by these tree top surveyors.

One crew reported starting an elephant stampede in Kansas. Later investigation indicated that the pilot's report was factual and that the itinerant circus which owned the beasts had peacefully collected its menagerie without direct knowledge of the reason for the stampede .

Other less fortunate crews have been forced down in unfriendly Cuban territory due to storms, where they have sweated out the in-disposition of the suspicious local authorities. Others, in attempting to measure the exact height of trees along the path, have misjudged the altitude or possibly the diameter of the topmost branches to the extent of a damaged plane and an assortment of tropical greens in the undercarriage.

The planes used in this type of work are ex-military AT-11 Beechcraft, specially designed Navions and the famous B-25 Mitchel Bomber.

All survey planes, are first reconstructed and fitted at the company's hangar at Michigan City, Ind., prior to being dispatched overseas, where they are ferried transatlantic by the survey crew itself. This feature of mobility makes it practical to operate at extremely long distances from the logistic and administrative base at Michigan City, and further provides a method for supplying this service on a world-wide basis.

Terrain in Turkey.

While this entire technique is based on the requirements of producing a graphic terrain profile within the accuracy demanded by a satisfactory microwave system, the question is infrequently raised as to whether these same techniques could not be equally applicable to other survey problems. The answer is obviously affirmative.

Based on the observed capabilities of this technique in providing accurate profile data in all parts of the world for telecommunications paths, it appears obvious that similar data could be used in the early reconnaisance study of highways, railroads, and power lines, especially in those areas where ground access is either prohibited or difficult.

Further, an application of this or a similar technique could, in time of war, provide important information on terrain details in unfriendly or restricted territory.

Advantage Of The Aerial Method

ONE of the principal advantages of this aerial method lies in the ability of the user to select, from his elevated observation post, the most logical path from "A" to "B" and then, at 120 miles an hour, collect accurate terrain data along the selected path.

Only those ground based engineers whose field parties have had to abort a path survey due to unexpected terrain difficulty can appreciate this advantage of the aerial system over that of the ground team. Further, at 120 miles per hour, many alternate paths can be observed and recorded for comparison in the time normally required for a few miles progress on foot.

This new technique of developing accurate terrain profiles from the air is obviously not a cure-all for all of the problems of microwave siting, nor does it provide all of the detailed terminal data on the site itself. This specific site data, as in other types of system analysis, must still be established and corroborated by ground crews prior to construction of the station.

In the final analysis the Aerial Radar Terrain Profiling technique described in this story can best be classified as an interesting and important improvement over the present routine methods of ground surveying. It does not change any basic concepts or requirements in this area of data collection, but rather through a happy combination of electronics and aviation provides a method of doing the job easier, faster, more accurately and at lower cost than was possible with the older techniques. — *W. C. Eddy.*

The Kermansdah area in Iran.

A TELEPHONE ENGINEER AND MANAGEMENT

REPORT

ON BRUSH CONTROL

Southern Bell Solves Runaway Brush Problem

HOW TO WHIP A BRUSH PROBLEM

A chemical control program whipped a runaway brush problem for the Middle Tennessee Division of Southern Bell Telephone and Telegraph Co. The brush condition had defied control by chemical and spraying procedures for over a decade.

By ROBERT F. SCOTT and F. E. GONZALEZ*

A RUNAWAY brush problem which had defied control by cutting and spraying procedures for a decade has been resolved by the Middle Tennessee Division of Southern Bell in two year's time.

Prior to the 1959 introduction of a revised brush control program, the Columbia District of Southern Bell's Middle Tennessee Division, located below Nashville, had serious brush growth problems along more than 3,000 miles of telephone open wire right-of-way. Brush reaching the bare telephone wires caused short circuits. In a moderate wind, the brush would "cross out" lines by whipping wires over each other. A "cross out" of two local rural lines could knock out eight to 16 phones if two circuits were involved.

The very fertile clay-loam soil with its great abundance of elemental phosphate, a 55-inch annual rainfall, and a 70-degree average temperature over the rolling-to-hilly country produces heavy brush growth each year.

Manual cutting, the traditional brush control method, proved too slow and too costly. The spraying of right-of-way brush with hormone weed killers prior to 1959, while helpful, did not provide adequate control of certain prevalent species — specifically black locust, hackberry, and elm.

Early in 1959, after examining extensive test plots, the Middle Tennessee Division of Southern Bell began a new chemical control program, applying one tablespoon of a cylindrical pellet herbicide, "Dybar" fenuron weed and brush killer, per clump of brush on its rural lines.

That year, the Columbia District treated 1,225 acres. Application of the chemical required 1,600 man-hours or 1.4 man-hours per acre. Account books showed the chemical and application costs totaled considerably less than the cost of cutting or foliage spraying.

Applications were scheduled to start when sap began to run and buds started to swell. Best kill resulted from applications made during the months of February through May. A thorough application produced a high per cent root kill of the dominant species, as well as oak, red maple, cedar, sassafras, persimmon, ailanthus, and cherry.

As a result of the 1959 program, the Southern Bell people learned that some species, such as ash, walnut, and tulip poplar, were hard to kill and better results were obtained if more than one tablespoon of herbicide was applied per bush. Based on previous experience, 1,044 acres were treated with "Dybar" during January to May 31, 1960, in the Columbia District. Application took 1.24 man-hours per acre, or a total of 1,200 man-hours. Chemicals and application cost were $27 per acre. Approximately two-thirds of the total rural and toll open wire routes have been covered.

In 1961, plans are set to cover the remaining portio

*Mr. Scott is district plant mgr., Middle Tenn. Div. of Southern Bell; Mr. Gonzalez is sales rep., Industrial & Biochemicals Dept., E. I. du Pont de Nemours & Co.

of the district and to start spot treatment of unkilled brush in previously treated areas. This spot treatment will continue each year, as necessary. By the fall of 1960, brush on all toll lines carrying long distance circuits had either been cut or treated.

Foliage spraying was discarded for several reasons. Basically, spraying was not providing adequate brush control of the dominant species on the right-of-way commensurate with the cost involved. Foliage spraying presented application problems due to the heavy equipment required for the job. During the nine-month "off-season," idle equipment, depreciation, and maintenance were costly problems.

"Dybar" fenuron weed and brush killer provided better brush control at lower cost, with a pail and a table spoon the only equipment needed. With this chemical, the cost of application was reduced to about 20 per cent of the total cost of brush control.

"Dybar" is non-volatile, and therefore can be used to control brush when it is growing near crops. The Columbia District right-of-way covers approximately 60 per cent crop area and the rest open land. As the effects of "Dybar" fenuron weed and brush killer on brush are slower to appear, the treated area does not show as drastic a change in appearance as it would with most other chemical methods of control.

Because the chemical has proved so efficient in its kill in the district, the Southern Bell people are expecting several years' control before they will consider general retreatment. According to Bill Elder, the Southern Bell plant contract supervisor who directs the district's brush control program in the field, higher rates can be justified for spot treating surviving hard-to-kill brush in previously treated areas.

Very little training was required for crews treating with the pelleted herbicide. Application was conducted

Brush, hand trimmed or sprayed in previous years, is controlled finally on the Franklin Township, Tenn., local rural lines of the Southern Bell system by "Dybar."

Inspecting the results of the chemical brush control program on the McMinnville-Tullahoma toll line are (left to right) H. C. OLSON and F. E. GONZALEZ, both of the Du Pont Company; ROBERT F. SCOTT, division construction supervisor, and BILL ELDER, plant contract supervisor of Southern Bell's Middle Tennessee Division.

with contract or resident forces, depending on fluctuations of work load. In the Columbia District, two-man crews were used for chemical brush control. Generally, a foreman alternated on each crew. After two years' experience, the crews know brush species well and the necessary dosage for kill.

While the brush control program with "Dybar" fenuron weed and brush killer is the backbone of brush control in the Columbia District rural areas, manual trimming of shade and other valuable trees continues as a necessity. For Southern Bell, the Morehead Tree Surgery Company works a pair of three-man crews continually on tree trimming.

Bill Elder advances several theories concerning brush control. He believes that the root structure decides the amount of control or kill. The shallow rooting of brush is due to the heavy soil underlaid with limestone. Deep tap-root trees with shallow side roots pose the toughest kill problem. When a thorough application job is done, control is permanent, although perfect control of every clump of brush is virtually impossible.

The Middle Tennessee Division of Southern Bell, particularly in the Columbia District, plans to go back over the lines on a spot treatment basis this year, in addition to finishing off the lines not yet treated.

The final objective of the Middle Tennessee Division's chemical brush control program is a right-of-way on which all plants that are hazardous to telephone wires or to the maintenance crews are eliminated and replaced by a vigorous cover of native grasses, wild flowers, and low growing shrubbery. This program will retard encroachment of brush, prevent soil erosion, and present a right-of-way that is both serviceable and pleasing to the eye. — *Robert F. Scott and F. Eugene Gonzalez.*

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TRAFFIC LIGHTS

By D. A. PERIGO
General Traffic Supt., West Coast Tel. Co., Everett, Wash.

The Importance of Initiative and Judgment

"AGREE OR DISAGREE — BUT THINK"

The telephone industry is headed into an era where employe initiative and judgment will reach a new high in importance. Automation may take care of the "usual" — but the "unusual" will require the careful handling of employes.

LET'S first define "Initiative" then look at what we mean by "Judgment." This is to prevent the necessity of someone taking issue with this article on the basis of using wrong words.

Initiative is what it takes to be self-propelled in the starting of an action.

Judgment is the ability to select the right direction when you come to a Y in the road and find someone removed the signpost.

Generally speaking, Traffic Operating Practices and Training Procedures ignore both *Initiative* and *Judgment*. Sure, you can quote from the Practice where it says "which ever seems appropriate" — but these things are said *after* the Practice has stated what should be done. This demonstrates more lip service to Initiative and Judgment than it does an honest desire to promote their usage.

It is our understanding that "overlap recording" came about in the late '20s as the result of an operator's "mistake." The Practice very definitely stated that you put the calling number on the ticket right off the bat — but one day an operator failed to do as she had been taught. She had passed the called number to the terminating operator before she noticed she did not have the calling number. At that point she did a very simple thing. She asked the calling party for his number and had time to get it before the called station answered. Probably many operators had made the same mistake and merely hoped the Service Observer hadn't caught it — but this one recognized that she obtained the calling number *during what was otherwise idle time.* If the operator who made this *mistake* received royalties from the savings created she would have become a wealthy woman, for those savings in the past 30 years have amounted to many millions of dollars.

Handling "The Unusual"

MANY times the Practice lists all the things the operator should do, then gives up by saying "Refer the call to the Supervisor (Service Assistant)" — but the Practice doesn't even trust the Supervisor for it then tells her what to do — even to the point of saying "Proceed as provided elsewhere in this practice for handling a similar condition." (Just how far can one go with insulting the intelligence of a Supervisor?)

The unfortunate part of this murder of Initiative and Judgment is that it applies to the *unusual* — something that may happen once in a hundred thousand calls. The people who officially word these Practices spend hours and hours preparing, checking, editing. There is stenographic time involved — printing — proof reading — paper by the ton — mailing — and then what happens? When it finally reaches the Chief Operator in some agricultural community it is read with amazement because she never knew such a case could exist. She puts it aside, then later reads it again. Finally she calls her boss and asks him if there isn't some mistake about sending this to her — and on and on — for the handling of the case that seldom happens.

We are headed into an era where we will need every bit of Initiative and Judgment we can find. Automation can take care of the usual — but the unusual requires people. Most of the DDD systems in use today handle only the simplest of our toll calls. The more complicated ones are handled by people. As we go into Person and Collect DDD the same principle applies. Equipment will handle the

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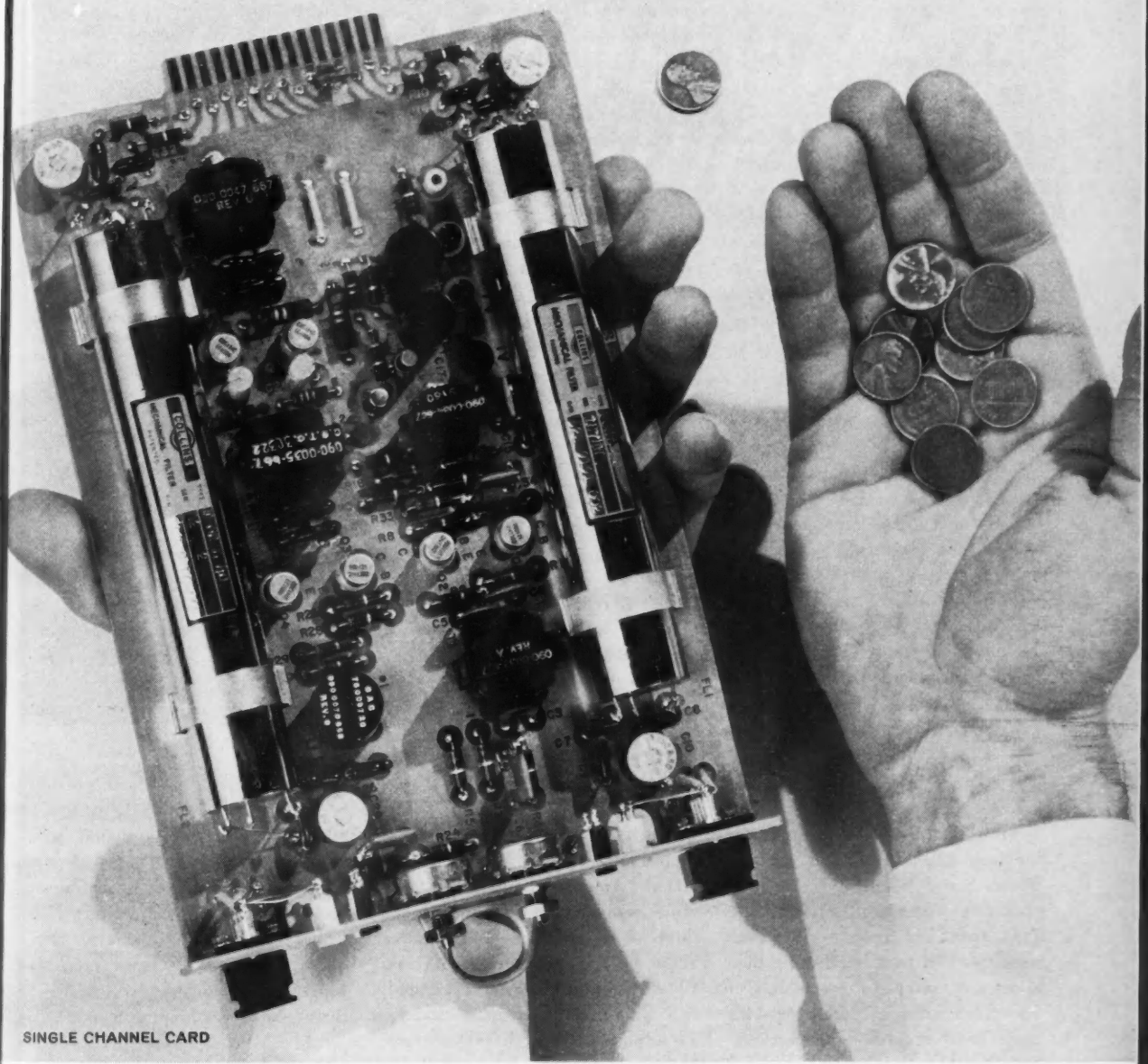

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simple functions — but people will be required for the unusual.

Finding The Barn Without A Driver

AN OLD college roommate frequently observed that "If a man is going to drive a horse he should have more sense than the horse." The fact that one puts a bridle on a horse to hold the bit in his mouth to which the reins are attached *assumes* that the man does have more sense than the horse — otherwise the reins are unnecessary. Any horse which is accustomed to finding his oats in a particular barn and a particular stall can find his way there without any driver and without any bridle.

Now to demonstrate the parable — our subscribers who regularly call particular places for particular numbers can effectively use DDD (if they have it) for their calls. They can find the barn without a driver. The subscribers who place unusual calls to unusual places need someone to help — to be the driver. Again referring to the parable, this means the operator must have more telephone sense than the customer.

It has been pointed out that automation can take care of the simple cases. Why, then, does the Traffic Department start making an automation of an operator on the very first day of her training, and from there on regiments her, when machines are now doing the jobs that operators were regimented for in the first place?

We believe in Standard Practices for the calls that occur with the greatest frequency. They are the ones that use the bulk of operator, equipment, and circuit time.

On occasion the observation has been made that when the cost of control is greater than the amount controlled there is economic suicide. This can easily be applied to Traffic Operating Practices.

What about the effects on coefficients and their uses? There is none. They don't even cover the unusual specifically, but the work is included in the total no matter how it is done and one call in a hundred thousand won't change anything whether it takes one minute or one hour.

Isn't it true that a lot of our toll practices were initially written so operators could conserve circuit time when dealing with other operators? Today the frequency of dealing with distant operators is greatly reduced — but the problem has seemingly been approached from the angle of "How can we re-write this?" instead of "Can we eliminate this?"

Why doesn't top management have the confidence to say "We are paying you for Initiative and Judgment. Use them," — and then demonstrate they mean it?

Now, at the calculated risk of being offensive to some we address a question to Chief Operators. How would you like to have a Traffic Operating Practice contained in a few pages with the following introductory paragraph:

"This Practice has been designed to cover those cases which happen most frequently *in all offices* or where the handling of a call affects another office. If a particular type of traffic has a high frequency in one office a section may be added locally to meet the proper standards of service.

"Anything not covered in this practice should be handled according to your own Initiative and Judgment."

All of us recognize that presently this is impossible, and yet there are literally hundreds of one night operator offices where the telephone industry has placed its confidence in the Initiative and Judgment of one lonely operator.

Be irritated, or stimulated — but *Think!* — *D. A. Perigo.*

NEW REFERENCE BOOKS

The Marketing of Consumer Services. Donald D. Parker. *Business Studies* Series No. 1. 1960. Study of marketing consumer services. Defines, quantifies, and describes these industries and factors affecting their prices and markets. Presents data on expenditures for consumer services. Shows how major marketing functions apply to consumer services, a section which provides a brief operating manual for these types of business. Order from Bureau of Business Research, College of Business Administration, University of Washington, Seattle, Wash. 142 pp. $2.50.

Census of Population 1960: General Population Characteristics. Final Reports: PC(1)—B. Period of issuance: December 1960 to May 1961. There will be 57 reports in series: U. S. Summary, one for each of 50 States, District of Columbia, Puerto Rico, Guam, Virgin Islands, American Samoa, and Canal Zone. Summary for State, with breakdown of urban places and counties: Data on age, race, household relationship, sex, marital status. Comparison with earlier censuses. Statistics for urban places of 10,000 or more. Detail for counties, minor civil divisions, and places of less than 10,000. Order by title from Bureau of the Census, Washington 25, D. C. Prices of individual reports vary from 35¢ to $1.75. Complete set, $43.40.

Inflation — Its Causes and Cures, Gottfried Haberler; June 1960. Analysis of inflation — types, causes, consequences — and anti-inflation policy measures. Sections on the 1955-58 inflation, business cycles and inflation, and association of U. S. balance-of-payments deficit with inflation. Part of the material was presented at a round-table conference on inflation of the International Economic Association, Elsinore, Denmark. Order by title from American Enterprise Association, 1012 14th Street, NW., Washington 5, D. C. 85 pp. $1.

Selected Proceedings of Sixth Annual Conference, Council on Consumer Information, April 1960. Major talks presented at annual meeting of Council on Consumer Information. Major discussion subject, consumer cooperatives; other subjects, consumer representation and protection. Order by title from Ramon P. Heimerl, Executive Secretary, Colorado State College, Greeley, Colo. 93 pp. $1.

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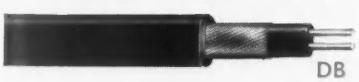
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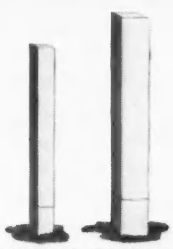
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COMMERCIAL DEPARTMENT NOTES

By ALLAN R. STACEY
Vice Pres., Sunland-Tujunga Tel. Co., Sunland, Calif.

Readers Report On Preferred Subjects

"TRACING NUISANCE CALLS" OF TOP INTEREST

TE&M readers recently gave the author their ideas for subjects to be discussed in future issues. "Tracing nuisance calls at subscribers' request" received the most votes; "treatment of delinquent accounts" ran second; and "pro and con on the Princess telephone" was a surprising 3rd place winner.

IN OUR column of December 15, 1960 we solicited readers' preferences for subject matter in *Commercial Department Notes*. You will recall that we gave 33 ideas and asked the reader to circle those which he would like to see used in a forthcoming article.

The response was excellent and now we have by popular reader vote the top 10 ideas for columns for 1961, a bottom two ideas for no discussion at all, and some miscellaneous comments to be passed along to you.

The Top Ten

THE TOP 10 really turn out to be 13 because in three cases we had a tie with an equal number of votes for those items. In first place by a very wide margin was the topic, "Tracing nuisance calls at subscriber's request." Apparently this is a genuine problem for many of our operating companies. Second place was taken by "The treatment of delinquent accounts." We in the operating end of the business are having trouble collecting our monies or, at any rate, want to do a better job.

The third place winner was quite a surprise. It was "Pro and con on the Princess Telephone." In my travels I have encountered quite a bit of customer pro and con on the Princess Telephone, but have not heard much discussion within the industry. Recently, while in Chicago, a cab driver gave me quite a lecture on the "Princess" when he discovered that I was a telephone man. However, we'll save the comments for a future article.

In fourth place was the subject "Aptitude tests for use in hiring." Fifth place showed two items in a straightforward tie. They were "Should we accept service applications by telephone?" and "Are you really service minded?"

The next six places were taken as follows with a two-place tie for ninth place, and a two-place tie for tenth place:

No. 6 — "How to train management personnel."

No. 7 — "Maintaining good public relations in the age of dial service."

No. 8 — "New sources of revenue for 1961."

No. 9 — "Introducing the new employe to his job, the company and the public."

No. 9 — "How to write a business letter."

No. 10 — "The effectiveness of newspaper advertising for a utility."

No. 10 — "Can we afford new types of station equipment?"

The Bottom Two

IN UNCONTESTED last place and clearly a loser by a substantial margin was the topic, "Giving your subscribers a daily calendar booklet." In fact, this poor subject received only two votes. This low rating surprised me for I have been of the opinion that daily calendar booklets are highly desired by our telephone customers, and that telephone companies are rendering a genuine service in providing them in addition to reducing traffic costs by giving the customer a place to record his frequently used numbers.

Possibly, this item was not sufficiently descriptive and my readers did not recognize it. It is a subscriber diary, booklet, pamphlet or other piece of material upon which he may record his frequently called numbers and thus not load up our information positions with requests for numbers he should know already.

Recently in my own company we placed one of these booklets in each copy of the annual telephone direc-

tory then being delivered and we had quite a few compliments from our subscribers.

Joining that subject in a search for a new low was bottom idea number two, "Holders for telephone handpieces." The low rating of this was also a surprise to me. Many is the time when I have seen members of the public twisting their necks to hold the conventional handpiece upon their shoulders while using their hands for other work. In fact, in many stationery stores, we can buy a holder which will keep the instrument in position with far less effort than the neck twisting method. However, apparently there is little or no interest within our industry on this item.

Write-In Comments

YOU will recall that we left a space for subjects to be written in at reader desire; many readers used these lines. Further, we received several letters outlining lengthy ideas.

One suggestion that I like very much is that of "Regional one-week seminars for small company management." I suggest that if you are interested in this type of thing you write to the USITA in Washington because I know that they have a committee considering this problem. It was my pleasant experience last summer to attend a regional one-week seminar for small company management as put on by the California Independent Telephone Association. This was very well done under the auspices of one of the university campuses in the state and I came home with the desire to send one or two additional people from my company to this seminar in 1961.

You are invited . . . to tell TE&M authors your problems of department policy or procedure on which you'd like to have an opinion.

While we don't claim to have all the answers, we'll welcome the opportunity to discuss as many as possible in our columns.

A second suggested topic was "How can we talk customers out of wanting service in boom times which they will throw back at us when the national economy levels out?" There is a lulu of a question. Readers, what is your answer to that one? Let me have your thoughts on it.

Another suggested topic was "IBM equipment for smaller companies." This is certainly worthwhile and many of you may be aware there are now in action local "service bureaus" which will provide IBM type billing arrangements for smaller companies through the use of the U. S. mails and at a relatively inexpensive charge per bill. I know several companies that are using this method and if you are interested, drop me a line and I'll steer you to them.

Another comment was "You have an excellent following as a result of your good articles. I have purposely overlooked some subjects which would be of more value to smaller companies but would appreciate an article on measurements. I have some distinct ideas on how not to do these. Certainly the first level supervisor needs more control with less paper

TE&M Reprints For Your Reference File

The following reprints of special TE&M reports and articles are now available. As supplies are limited, we urge you to check the following list and order the reprints you need for your telephone reference file.

No. 100 — "PROGRESS WITH THE ALL-BURIED SERVICE CONCEPT," by JOHN S. REED. This 24-page article thoroughly discusses and illustrates the materials, tools, and technology involved in placing rural and urban telephone service Underground. Price: 1-5 copies, 50¢ ea.; 6-25 copies, 40¢ ea.

No. 101 — "A FUNDAMENTAL APPROACH TO VNL," by C. D. EHINGER. This 8-page article defines terms, explains fundamentals, and shows how to calculate VNL transmission design objectives. Price, 1-5 copies, 50¢ ea.; 6-25 copies, 40¢ ea.

No. 102 — "REGULATION," by JOSEPH J. BROWN. This 16-page article by the Chairman of the Nebraska State Railway Commission discusses: (1) "Regulation and Public Interest;" (2) Regulation and Service;" (3) "Regulation and The Investor;" and (4) "Regulation And Free Enterprise." Many companies have ordered copies of this excellent article for distribution to employes, the press, stockholders, and others interested in regulation. Prices. 1-5 copies, 50¢ ea.; 6-25 copies, 40¢ ea.

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work." This man speaks from the heart and I agree that we need more control with less paper work. The question is how to effect it.

Two other comments that interested me were "More cooperation between telephone companies in trying to trace errors in toll calls," and "More cooperation between telephone companies in helping to collect bills from floaters." I am happy to see more and more cooperation between telephone companies in this regard. I know of one or two that will help collect bad debts originated in other companies by making a personal contact with the debtor if he does not have telephone service in the new location, or, if he does have service, telling him how this bad debt in another company affects his credit rating in the new company.

Finally, here was a man with a forward look, "Looking ten years ahead. What to expect then. P. S. Have gone from magneto to all relay to XY, what next?" It would be most interesting to explore the future with all the changes lying ahead for us in the telephone business.

Our Schedule For '61

ORIGINALLY it was my plan to cover each of your most popular topics during the year 1961. However, our good editor has limited my space for the first part of this year so that there is only one column per month. It is my hope to pick it up with two columns per month in the last half of 1961. Thus, if things work out in the next issue we'll be tackling the question of tracing nuisance calls and the following five columns will handle the first half of the top ten ideas as listed above.

I now wish to thank each one of you who sent me your ideas or commented on those that I submitted. It is only through expression of your interest that we know which way to direct this subject matter. Certainly this fine industry of ours will grow stronger because of the interchange of our ideas. Looking forward to being with you in the next article in May and tackling the subject of nuisance calls. See you then. — *Allan R. Stacey.*

AT&T Co. distributed 17,900 box lunches to shareholders attending annual meeting in Chicago.

18,420 Jam Chicago's McCormick Place For Annual Meeting of AT&T Shareholders

A RECORD 18,420 American Telephone & Telegraph Co. shareholders jammed Chicago's McCormick Place on April 19 for the first annual AT&T stockholders' meeting held outside New York since the company's founding in 1885, and participated in the largest stockholders' meeting in corporate history.

The tremendous turnout at Chicago's lakefront exposition center, swelled to an unofficial total of 20,000 guests and shareholders, smashed the existing annual meeting attendance record set in 1959 when 11,900 stockholders attended the annual 'AT&T meeting in New York City.

For a time, there was standing room only at McCormick Place. The stockholders rapidly filled the main hall's 13,800 seats and overflowed into the adjoining theater's 5,000 seats by the time the meeting began.

Of the nearly 2 million AT&T stockholders, about 150,000 live in the Chicago metropolitan area, and an equal number in the remainder of the state and the adjacent states. The Chicago area grouping is the largest single grouping outside the New York area.

Many of the women shareholders came well prepared for the immensity of the exposition center, packing comfortable pairs of flat heeled shoes to replace their dress shoes. First aid stations handled 25 to 30 cases, the majority blister problems, in addition to headaches, turned ankles, and nosebleeds.

To allow all of the audience in the vast hall to hear the remarks of Frederick R. Kappel, president, and others, the company hung 1,000 speakers from the ceiling. Four podiums with microphones were spotted throughout the meeting area for stockholders' use.

AT&T needed about 300 persons to act as ushers, check credentials, man exhibits, and provide other assistance to shareowners.

The giant utility had prepared 17,900 box lunches for the overflow crowd. Approximately 1,600 holders, who were unable to get box lunches, were given checks to eat in the exposition center's cafeteria.

The meeting lasted four hours and 17 minutes, the shortest since 1957, when the event took four hours and seven minutes. The longest AT&T stockholders meeting lasted six hours and 50 minutes in 1950.

AT&T President Frederick R. Kappel, who held a news conference prior to the meeting, said the country's economy is on the way up but that

1961 will not be "quite as good" as 1960.

In response to a question on some brokers' characterization of AT&T stock as a growth security instead of a steady investment stock, Kappel said he was not fearful of such a change in broker sentiment.

"However, the Wall street stock situation ought to scare a lot of people as there is little rhyme or reason in it," he added. He did not expand this remark.

Kappel said AT&T is eager to orbit its experimental communications satellites as soon as possible. He disclosed that the company could have three satellites ready by Christmas if it got a go ahead from the Federal Communications Commission.

"I would dearly like to see this country the unquestioned leader in space communications," he said.

The meeting was barely under way when Wilma Soss, a perennial objector at corporate gatherings, put on a 10-minute speaking performance which met with something less than enthusiasm.

Miss Soss, wearing a red and white striped Uncle Sam hat, praised AT&T for holding an annual meeting in Chicago, but scolded the company's officers for failing to mail to the press copies of the proxy statement containing a proposal she made. She advocated secret voting by stockholders on election of directors and on resolutions appearing in proxy statements. The proposal was defeated.

Miss Soss asked Kappel to refrain from any statement that might affect the price of the stock until the market closed.

"If you are implying that I did that at the last annual meeting, you are in error," Kappel said. "I will say at this annual meeting what I had intended to."

Miss Soss, who is president of the Women Shareholders in American Business, Inc., left the podium provided for stockholders to the accompaniment of catcalls by some fellow stockholders.

At the annual meeting President Kappel told the sharowners, "Our growth in recent months has been a good deal slower than in early 1960,

AT&T Co. President FREDERICK R. KAPPEL greets shareholders attending annual meeting.

but fairly well in line with expectations."

"Last year," he said, "our business increased rapidly in the early months, but the pace slackened as the year went on. Remember, it is decline in the *rate of growth* that I am speaking of here, not decline in the total volume of business. The total volume continues to go up. This year, as I said, it is moving up more slowly, but there was a slight pickup in March and we are hopeful of further improvement as the year goes on. I doubt that we shall add as many new telephones this year as last. Nevertheless, I am confident that the gain will be substantial and that we shall also have a very respectable growth in the number of long distance conversations."

Earnings

STATING that the company expects to maintain earnings levels that will appropriately support its financing, President Kappel emphasized that "Today as always, however, we depend on both federal and state regulatory bodies' seeing the wisdom of earnings that will keep the Bell System in good financial health and assure first-rate service at reasonable cost."

"In recent years," he said, "we have been able to improve both service and earnings by introducing better equipment, widening our service offerings, and increasing efficiency. When these efforts are effective as they have been, we do not believe that regulators should penalize progress and destroy incentives by putting a low ceiling on profits. As long as profits are within a reasonable range — and there is no part of the Bell System today where they are above that — we need the leeway that spurs effort and brings about real progress.

"A good example is interstate long distance service. Earnings on this part of our business are better today then a few years ago, and at the same time the users are getting better service at no increase in price. Looking back a bit further, interstate telephone rates are now lower than they were before the war, and at today's volume of business the public is paying a billion dollars a year less than if the rates of 25 years ago were still in effect."

No "Spin-Off" for W. E.

REFERRING to the function of the Western Electric in the Bell System, President Kappel stated that Western Electric is the manufacturing and supply unit of the System. It has been a part of the System since 1882. The AT&T Company owns 99.82 per cent of Western Electric's stock, and AT&T and Western each own 50 per cent of Bell Telephone Laboratories, the system's research organization.

"Bell Laboratories develops the finest communication equipment in the world and Western Electric makes it — for the Bell telephone companies," he said. "The telephone companies, the Laboratories, and Western work together in intimate day-to-day cooperation, and they work toward the *same* service goals. In my judgment, this three-way teamwork is the main reason why this country has the best communication service in the world, and is the absolutely essential foundation for the Bell System's success as a business.

"In recent years, however, we have heard talk, the gist of which is something like this: — Western Electric, it is said, is tops in the field of electronics. So its potentialities as an independent electronics manufacturer are tremendous. Therefore, wouldn't it be a good idea — and wouldn't the possibilities for profit be great indeed — if the Bell System were to 'spin off' Western Electric?"

Pointing out that along with this talk, there has been considerable buying and selling of the very small number of Western Electric shares that are publicly held, and a steep rise in the price of these shares, President Kappel warned: —

"If this activity in the stock is in any

degree based on the notion that we might consider separating Western from the Bell System, then it is necessary to correct such a misunderstanding.

"I wish to say on behalf of your Board of Directors, and with all possible emphasis, that the AT&T Company has no intention of spinning off Western Electric either now, in the near future, in the distant future, or at any time whatsoever. The reason for this statement is overwhelming. Western Electric is vital to the Bell System. To separate it from the System would not be a mere 'spin off' — it would be the dismemberment of this business and a major misfortune to our share owners as well as to our customers.

"Furthermore, the truth is that Western's position in electronics manufacture *stems directly from its ties with Bell Telephone Laboratories and the Bell telephone companies.* It is the whole Bell System's drive for research that generates our technical progress, and the research gets done in the Laboratories, not in the manufacturing company. *This* is the how and the wherefore of our advanced position in the new electronic arts. And it is Western Electric's intimate *affiliation* with the Laboratories, and its *membership* in the Bell System, that makes it tops in its field."

Kappel emphasized that the benefits of the system's research and development work accrue to customers and share owners in two ways:

"First, the new devices and systems developed in the Laboratories, and made by Western, go into the telephone companies' physical plant in a steady stream so that we can perform more services for more people and do so more efficiently.

"Second, we are able to negotiate agreements with other companies that give us the right to use their inventions now and in the near future. When we license them under our patents, the advantages are by no means one-way. Certainly there are great advantages to the other companies, and it is a fact that the fast-growing semiconductor industry, which did a business of about $500 million last year, owes much to licenses obtained from the Bell System. But it must not be forgotten that in exchange for our giving others rights under our patents, we can obtain rights under theirs.

"We now have license agreements with about 750 companies here and abroad. Many of their discoveries are very useful to us — in switching systems, for example, including our new Electronic Central office; in radio relay systems; in new methods for transmitting speech and data; in automatic accounting equipment that records the details of long distance calls dialed directly by customers.

"Under many license agreements, we also receive cash royalties. But most significant is the exchange of rights. The rights we obtain help us to serve the public at lower cost than would otherwise be possible. They help us operate more efficiently and this benefits both customers and share owenrs. I couldn't say that our patent rights benefit any one group exclusively. The point is, they help the whole business and work to everyone's advantage . . . ."

Space Communications

DISCUSSING space communications, President Kappel stated "We have made definite and we believe sound proposals for a satellite communication system."

"We have the technical know-how to put these proposals into effect," he said. "We can act promptly and there is great need for prompt action.

"The Federal Communications Commission has stated that the earliest realization of a commercial system is a national objective — that this may be accomplished through concerted action by existing agencies of government and private enterprise — and that in accordance with traditional policy in this country, private enterprise, under regulation, should be encouraged to develop and use satellite systems for public communication services.

"The Commisison has also assigned to the AT&T Company radio frequencies for experimental use with our proposed system. So we are ready to move. What we are seeking today — and have been seeking for several months — is for some branch of the Government to provide facilities for launching experimental satellites that we would be glad to pay for."

Explaining, why the Bell System is interested in using communication satellites, and what the System's position is, President Kappel reported: —

"We would use such satellites for the same purpose that we now use ocean cables and short-wave radiotelephone facilities — that is, to connect our communication network in the United States with the networks of other countries, and thereby provide international overseas service to the general public.

"We have been providing such service for 34 years. A satellite system would be a natural supplement, a natural extension of the means already employed. To us a communication satellite is simply another relay station. Radio signals are beamed up into space, and the satellite receives, amplifies, and retransmits the signals down to earth again."

Pointing out that a satellite communication system would have large capacity, Kappell said, "it could provide *many* channels to interconnect our network with those of other countries — and the demand for international communication services is growing fast — very fast."

"Overseas telephone conversations increased 20 per cent last year," he said. "To provide ample, high-quality, dependable service in the years ahead, both ocean cables and satellites will be needed. So we have these very practical and pressing considerations of future need. They are why we have been urging prompt action. The wise thing is to take time by the forelock. Furthermore, I for one would dearly like to see this country the unquestioned leader in space communications, and I am sure I am not alone in that wish. None of us wants the United States to come in second again. To accomplish the result we all hope for, it is essential to move ahead without delay.

"We have been doing all we can to make our position clear to government, other industry, the press, and the public in general. There are several points and I shall enumerate them here:

"(1) The system we propose would be operated under government regulation just as present international communication facilities and services are operated.

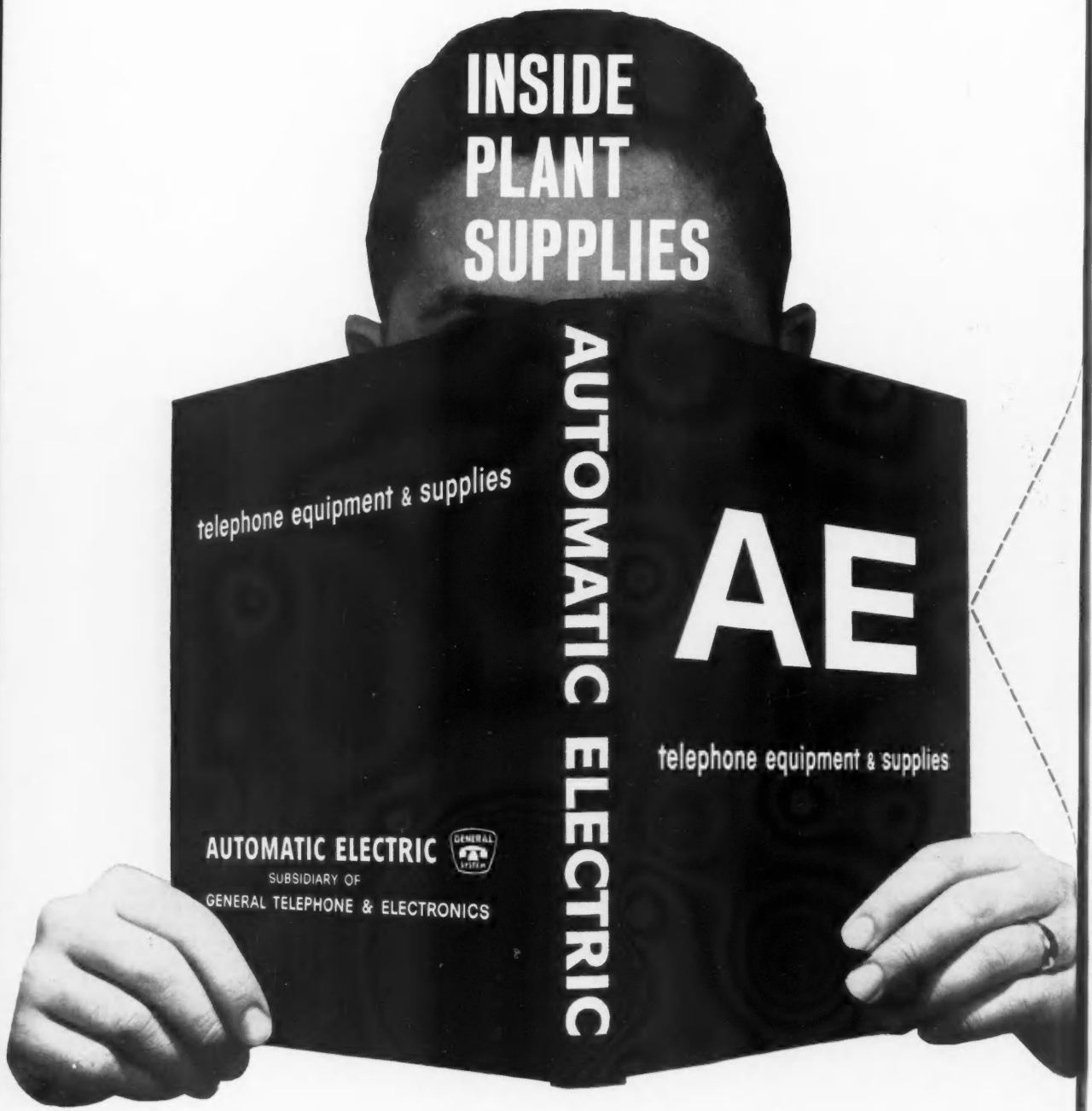
"(2) The system would be operated jointly with the communication agencies of foreign countries. They would own the terminals in their respective countries, and we would work out equitable arrangements with them for sharing the cost of the satellites. We have had 34 years of experience working out such agreements, we have 163 agreements now in effect, and the Bell System and its foreign partners now have an investment of some $275 million in overseas faciilties.

"(3) There is no question of the Bell System's seeking a monopoly of space communications. If other 'common carrier' companies engaged in international communications — the international telegraph companies, for instance — desire to share use of the satellite system we propose, it would be available to them for any services the Federal Communications Commission authorizes them to provide. This could be done either through leasing arrangements, as is now done in the case of ocean telephone cables, or by the other companies' participating in ownership of the system by sharing pro rata in the capital cost and operating expenses. Furthermore, our system, which we have proposed in order to do our public service job as it ought to be done, would not in any case preclude the development of others. There is plenty of room for more.

"(4) We would expect to obtain much of the equipment we would use in our satellite system from other companies on a competitive basis. A number of the critical components have been developed by Bell Laboratories — in fact these developments are what make high-quality communications by way of satellites possible. But the opportunity for others to provide large quantities of 'hardware' remains wide open. In addition, we would expect to obtain rockets and launching services from other companies with the launchings of course under government supervision.

"(5) We can move quickly. The system we propose calls for a number of satellites orbiting a few thousand miles in space.

get the INSIDE STORY on



AE's 1961 Supply Catalog is the place to find everything you need for inside plant installations...everything from interior cable to plugs and jacks. In fact, the AE catalog is the best reference you have for all telephone equipment or supplies. Consult yours today! And remember, at AE you get *fast delivery* from a *large stock* of *famous brands.*

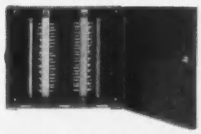
GENERAL CABLE WIRING CABLE

Plastic insulation and jacket. From 6 to 101 pairs in 24 and 22 AWG conductor sizes. Individual wires insulated with semi-rigid compound. Pairs are staggered to reduce crosstalk. Fully color coded.

ALPHADUCT INTERIOR WIRE

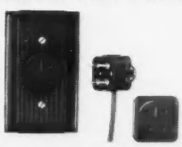
Tough thermoplastic covering over solid, annealed copper conductors. Colored rayon marker threads. In 2, 3, or 4-conductor assemblies.

TYPE 75 BUILDING TERMINALS



Standard 4-inch deep box is designed for easy surface mounting. Terminal strips have screw-type binding posts for distributing wires, soldering terminals for cable wires.

PLUGS AND JACKS



For surface mounting. Can be supplied with flush plates for mounting in standard switch box. Plug has screw terminals for spade-type cord connections. Brown or ivory plastic.

AE Warehouses

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158 Corliss Avenue
RA 9-4996

Kansas City 8, Mo.
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HArrison 1-7575

Northlake, Illinois
Fillmore 5-7111

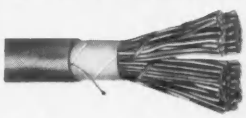
Portland 10, Oregon
2360 N.W. Quimby St.
CApital 3-7244

Richmond 21, Virginia
2915 Moore Street
ELgin 8-9280

STAPLING GUNS

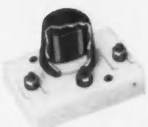
AE has a variety of stapling guns for securing wires to walls, mouldings or desks. All are designed for good holding power in wood, plaster or board, using a wide range of staples suitable to any job.

GENERAL CABLE SWITCHBOARD CABLE



Spiracode color coded. Colors extend through entire insulation—can't wear off. Plastic insulation and sheath. Designed for easy installation. Attractive gray sheath.

RELIABLE INDOOR STATION PROTECTORS



Simple, one-piece design makes mounting and installation easy. Static discharges are drained instantly without leaving the line grounded.

COMCO REPLACEMENT CORDS

AE carries a complete line of Comco cords to fit any popular make of phone. Coiled or straight cords in full range of colors. Special lengths and finishes available.

Each would contain equipment to receive, amplify, and retransmit communication signals. Continuous service to Europe could be provided with from 20 to 25 such satellites, and world-wide service with about 50. We are confident that in a very few years — three or four or maybe even less — we could have a full-scale system in operation. But the immediate need is this: it is to get a bird in the air for testing at the earliest possible moment. We need to get going — now. This is all-important. And I can say this — if permission is forthcoming *promptly* to launch a bird, under appropriate government supervision, the Bell System is prepared to deliver the first of several experimental satellites by Christmas."

Referring to current discussions of an alternative type of system, employing only a few satellites more than 22,000 miles out in space, President Kappel stated that "Such a system may eventually have important uses."

"But," he said, "difficulties are involved in placing in orbit, exactly positioning, and orienting such satellites, and to overcome these difficulties may take a long time. Another grave difficulty is that at that distance, when people talk to each other they will encounter a delay of six-tenths of a second in their conversation. This would result in a degradation of telephone service, and it doesn't make sense to set up a system that would provide service inferior to that provided by existing ocean cables. Therefore, from the standpoint of quality, and also from the standpoint of getting satellite communications working in the shortest possible time, we are certain that the system we have proposed is the way to proceed. The over-riding, all-important fact is that we have a big service job to do. All we ask is the opportunity to go ahead and do it . . ."

In his closing remarks, Kappel stressed the "paramount importance of high quality service."

"The annual report which you have seen puts greater emphasis on our efforts to provide service that is ever more useful, more valuable, and constantly improving," he said. "I feel that I would be remisss if I did not take every reasonable opportunity to remind the share owners that the whole success of this business — our reputation and standing with the public, our earnings, your investment,

AT&T Pres. FREDERICK R. KAPPEL inspects "Touch-tone" calling exhibit.

your dividends, everything — depends utterly on the success of our service effort. To that we are dedicated and must always be dedicated, and it is through such dedication, I am certain, that we shall serve the best interest of every share owner of AT&T. I want to thank you again for the wonderful support you give us, and renew our pledge that we shall always do our utmost in your behalf . . . ."

After the formal address by President Kappel, the meeting was opened for questions and more than 30 stockholders asked 50 or more questions during 3½ hours. By 5:47 p.m., when the meeting adjourned, nearly three quarters of the assemblage had departed.

More questions related to pensions and retirement plans than any other subject, reflecting the advanced age of many who attended.

Queried about conflict of interest, Kappel said AT&T awards business to suppliers on merit and wherever possible through competitive bids. AT&T officials are prohibited from having any personal interest in suppliers, he said. "I am confident there is no conflict of interest within AT&T," he said.

One stockholder asked why the company didn't pay dividends in stock instead of cash. Kappel replied that the management had considered this, but found that in the vast majority of cases individual shareholders' dividends wouldn't add up to a full share. As a result the company would have to issue scrip, greatly complicating the dividend distribution, he explained.

Other questions ranged from why doesn't AT&T have a woman as a director to why don't retired Western Electric employes get free phones like retired Bell workers do. President Kappel said he had "researched the stockholders list" for a woman qualified to sit on the board "but hadn't found one with the kind of background of experience the company desires." Free phones are the affair of the company involved, he said.

One stockholder asked how long directors' meetings last. Kappel said they usually run about 75 to 90 minutes and attendance averages about 85%.

Shareholders re-elected all directors and the auditors. They also approved an amendment increasing the number of shares authorized for sale under the employe stock plan by 15 million shares. The original 1958 plan called for up to 21 million shares to be sold to employes other than officers. Another proposal, originated by Miss Soss, president of the Federation of Women Shareholders in American Business, Inc., that voting be by secret instead of by signed ballots was defeated.

Many stockholders were visibly upset by the dominance of a few during the question and answer part of the session. Miss Soss, for example, made seven or eight speeches.

Near the end, one stockholder, John A. Wass, of Homewood, strode to the podium and addressed Kappel.

"Many things have been brought up that maybe you and the board of directors are interested in," said Wass. "But some people want to play a record every ten minutes.

"You have been very patient and have said, 'Let them be heard' but the rest of us don't necessarily want to hear them. I've heard it said people like to hear their heads roar. It's the big stuff we want to hear, not this chicken stuff."

NEW! EXTRA LONG RECEIVER Koiled Kords* NOW IN COLOR

Extra long receiver KOILED KORDS in color enable you to offer another service to those subscribers who want to move more than four and a half feet from their instruments.

New, long KOILED KORDS retractile cords in color — and in black — are offered in two standard lengths, 18 inches retracted that extend to approximately 9 feet and 30 inches retracted that extend to 15 feet.

Extra long receiver KOILED KORDS are available in colors to match all telephones. See your telephone supply house for full information.

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KOILED KORDS, the original retractile cords, are the result of 17 years of research, development and use.

* KOILED KORDS is a trade mark of KOILED KORDS, INC.

DONALD C. POWER, chairman and chief executive officer of General Telephone & Electronics Corp., presided at annual shareholders' meeting.

DON G. MITCHELL, was elected vice chairman of the GT&E board during recent meeting of shareholders at Gloversville, N. Y.

Newly-elected President of GT&E is LESLIE H. WARNER. Warner was elected GT&E president during the shareholders' meeting at Gloversville, N. Y.

General Telephone Holds Annual Meeting: Leslie H. Warner Elected GT&E Pres.

LESLIE H. WARNER, who started his telephone career in 1929 with the Long Lines Department of the American Telephone & Telegraph Co., was elected president of General Telephone & Electronics Corp., New York City, at the annual organizational meeting of the board of directors following the annual meeting of GT&E shareholders April 19 at Gloversville, N. Y. Warner succeeds Don G. Mitchell who was elected vice chairman of the board.

Warner had been executive vice president of the company since 1957 and a director since March 1960. He joined Automatic Electric Company in June, 1937 and has been associated with the manufacturing and sales subsidiaries of the corporation ever since. During the course of his career, he has served as president of several of the principal manufacturing companies in the General System including Automatic Electric Co., and Leich Electric Co.

At the annual meeting, Donald C. Power, chairman, said the company had net income for the first quarter of $15,481,000 or 22 cents a share, down from $17,731,000.

Revenues and net sales of General Telephone & Electronics Corporation for the first quarter of 1961 totaled $287,672,000, which was slightly below the corresponding 1960 period, but "an upward trend is anticipated during the balance of the year," Donald C. Power, GT&E chairman and chief executive officer, told the annual meeting of GT&E shareowners.

Revenues of $124,547,000 from telephone operations were nine per cent ahead of a year ago and the highest of any quarter in the company's history "because of continued growth in telephone service," Chairman Power reported. Manufacturing sales of $163,125,000 for the period were below a year ago because of lower demand for some consumer and commercial products due to the business recession, but sales showed an upturn during March and April.

Net income from telephone operations during the period set a new record for any first quarter, but decreased net income from manufacturing operations caused consolidated net income to be lower than a year ago, the GT&E Chairman said. Net income totaled $15,481,000, and earnings per common share equaled 22 cents on the 70,600,000 average shares outstanding during the quarter as compared with 26 cents on the substantially lower average of 66,902,000 shares a year ago.

Reviewing the company's rapid growth in recent years, Chairman Power stated that net income for 1960 exceeded total sales and revenues in 1950. Over that period, revenues and net sales have increased from about $70 million to $1,178,000,000, and net income from $4,136,000 to $72,430,000. He also pointed out that the GT&E telephone and manufacturing subsidiaries will invest approximately $269 million in new plant and equipment in 1961, and that "over the next seven or eight years," total new investment will amount to at least $2 billion. At the 1960 year-end, he added, total investment in telephone plant was more than $1,800,000,000, equal to $388 per telephone — "which provides some idea of the large amounts of capital required to provide service."

He stated that there now are 26 domestic telephone operating companies in the General System, serving more than 4,100,000 telephones in 5,600 communities in 31 states, constituting the nation's largest independent telephone system. Three subsidiaries in British Columbia, the Dominican Republic, and Haiti serve more than 570,000 telephones, bringing the System-wide total to more

than 4,700,000.

Reviewing the General System's manufacturing operations, Power said that over the past ten years "these activities have grown and diversified to become one of the leading industrial groups in the world."

Pointing out that manufacturing operations 10 years ago consisted of 300 employes and sales of about $8 million, the GT&E Chairman said the group now has sales volume "approaching three-quarters of a billion dollars" and about 50,000 employes. The manufacturing subsidiaries include Sylvania Electric Products Inc., Automatic Electric Co., Lenkurt Electric Co., Inc., Leich Electric Co., Electronic Secretary Industries, Inc., and General Telephone & Electronics International Inc.

"The growth and development which the General System has enjoyed since 1950 is quite a precedent to follow, but I am confident that the next 10 years will bring at least the same kind of progress," Power said.

Turning to space communications, he said that the General System believes a satellite system carrying telephone conversations, global television and data transmission is economically and technically feasible.

"A satellite system should be established as soon as possible because the world is growing so fast that present day communications will be outmoded before we know it," Power commented.

In the area of national defense. Chairman Power reported that the current backlog stands at about $65 million, a total that is expected to show a steady increase. Defense business, which totaled $140 million in 1960, is running at about 20 per cent of manufacturing net sales, a percentage that is not expected to change significantly because of anticipated increases in non-military sales.

Citing the System's activities in "communications and electronics projects of a highly advanced nature with strong future potentials," Power said that among the major projects are communications systems for Minuteman long-range missiles and Polaris missile-launching submarines.

RICHARD H. WEST, chairman of the Executive Committee of the Board of Irving Trust Co., New York City, was elected to the board of directors of General Telephone & Electronics Corporation at the annual shareowners meeting. West is a director of the American Sugar Refining Co., Canada Dry Corp., Clupak, Inc., and Sterling Drug Inc. He is also a director and member of the Executive Committee of Consolidated Cigar Corp., director and member of the Finance Committee of West Virginia Pulp & Paper Co., director and chairman of the Finance Comittee of Servomechanisms, Inc., and a director and president of 795 5th Ave. Corp.

Other current projects include a completely transistorized electronic computer known as "MOBIDIC" and electronic countermeasures systems.

Reviewing GT&E's research and development program, Power emphasized the work being done in solid-state electronics, including the transistor; microwave communications; metallurgy, including high-temperature materials for the space age, and various other basic fields important to communications and electronics.

He described work being done on an experimental flat panel electronic device which utilizes a new principle to produce a lighted moving image. The device has many theoretical applications in the National Defense and commercial fields, Power said, but he pointed out that the device was in too early a stage of development to make any predictions about its possible use in flat-wall television.

At the meeting, the shareowners elected Richard H. West, chairman of the Executive Committee of the board of directors of Irving Trust Co., New York City, as a director of GT&E. Also approved was authority for the corporation to issue and sell up to $100 million principal amount of convertible debentures as required for construction and expansion.

A regular quartely dividend of 19¢ per share on its common stock was declared by the board of directors. The dividend will be payable on June 30, 1961 to shareowners of record on May 22, 1961.

Regular quarterly dividends of 55¢ per share on the 4.40% Preferred Stock; 59.375¢ per share on the 4.75% Convertible Preferred Stock; 53.125¢ per share on the 4.25% Convertible Preferred Stock; 66¢ per share on the 5.28% Convertible Preferred Stock; and 54.5¢ per share on the 4.36% Convertible Preferred Stock; each of which is payable on July 1, 1961 to shareowners of record on May 22, 1961 were also declared.

The shareowners meeting was held in Gloversville in keping with GT&E's practice of holding its annual meetings in different parts of the country where manufacturing or telephone operations are located. Gloversville is in the area served by General Telephone Company of Upstate New York, which has its headquarters in nearby Johnstown.

Printed Forms Catalog

THE NEW Suttle Press Division printed forms catalog has recently become available according to the Printing Division of Suttle Equipment Corporation.

This catalog is the result of detailed review and thorough system research. It includes general office forms, plant department forms, commercial department forms, traffic department forms, accounting department forms, as well as a complete listing of binders and accessories for all forms storage.

These standard stock forms are shelf items at the Suttle Press, Lawrenceville, Illinois and are available for immediate shipment. Copies are available free by writing to *Suttle Press Division, Suttle Equipment Corporation, Lawrenceville, Illinois.*

"Telephone Protection Practices"

(Continued from page 26)

obtained. This information can be used by every telephone company to assist in establishing policies and instigating sound programs to utilize the most modern protective practices and the safest of working methods.

Where To Start

IF RELIABLE advice is wanted right from the fountainhead of information on protection against lightning, a fairly obvious way to get it is to go to the latest report of this country's Committee on Protection Against Lightning. One such report is entitled "Code for Protection Against Lightning," and is further identified as Handbook No. 46 of the United States National Bureau of Standards.

This handbook is only one of a series of codes (basic rules and standards) of engineering and industrial practice, including safety codes, cooperatively developed by the National Bureau of Standards (abbreviated hereinafter as NBS), various national organizations, and others concerned. In many cases these recommended requirements are given official status through their incorporation in local ordinances by state and municipal regulatory bodies.

When studying and using *safety* codes, or codes on any other subject for that matter, *care should be exercised to make sure that only the latest revised edition is used.* In the case of the NBS Handbook 46 previously referred to, it was approved[4] by the American Standards Association in 1953 and supersedes the Bureau's H-40 which was published 8 years previously in 1945.

Superseded codes should be promptly replaced with up-to-date versions in a telephone company's reference file.

(EDITOR'S NOTE: *Announcement has been received that a* 1959 *revised edition of the Code for Protection Against Lightning has been released and is now available for distribution. Later on, Mr. Talmage furnishes addresses of sources from which this* 1959 *edition of the Code may be obtained.*)

Copies of codes should be made available in sufficient quantities so that they are always conveniently accessible to each affected department, division, and unit.

Protection Of Persons

IN THE first part of the 88-page Code for Protection Against Lightning there are outlined the following basic rules which can be used by anyone inside or outside of the telephone industry as a guide for personal safety during thunderstorms:

(a) Do not go out of doors or remain out during thunderstorms unless it is necessary. Stay inside of a building where it is dry, preferably away from fireplaces, stoves, and other metal objects.

(b) If there is any choice of shelter, choose in the following order:
1. Large metal or metal-frame buildings.
2. Dwellings or other buildings which are protected against lightning.
3. Large unprotected buildings.
4. Small unprotected buildings.

(c) If remaining out of doors is unavoidable, keep away from:
1. Small sheds and shelters if in an exposed location.
2. Isolated trees.
3. Wire fences.
4. Hilltops and wide open spaces.

(d) Seek shelter in:
1. A cave.
2. A depression in the ground.
3. A deep valley or canyon.
4. The foot of a steep or overhanging cliff.
5. Dense woods.
6. A grove of trees.

The Census Bureau reports that 90 percent of the hundreds of deaths and the many more hundreds of injuries caused by lightning each year occur in rural districts, which for census purposes include all towns and villages having 2,500 inhabitants or less. If you work, live, or play golf in such an area, it would do no harm to take an extra minute right now and read over the above rules for personal safety a second time in order to get them firmly implanted in your mind.

Golfers and their caddies have suffered many deaths and injuries from lightning on golf courses. A three-cent U. S. postal card request addressed to the U. S. Golf Association, 40 East 38th Street, New York 16, N. Y., will bring you specific precautions to use in such cases. For example, it may be of interest to note that, among other things, the USGA advises, "It is understood that raising golf clubs or umbrellas above head is dangerous on a golf course in a thunderstorm."

Devotees of other outdoor hobbies and outdoor sports should check with their respective associations for similar specialized safety rules for personal conduct during thunderstorms.

Property Damage

THOSE who have experienced — perhaps *suffered* is the better word in some cases — losses due to lightning need not be reminded of how expensive such damage can be. To others who may not fully appreciate the complete extent of this common hazard, it may come as a shock to learn that the estimated loss in building fires alone from this cause in 1957 (as reported in the National Safety Council's 1959 edition of "Safety Facts," a standard source of accident statistics) was $29,757,000. Estimates of property losses from lighting for the five-year period ending in 1957 show an average

[4] "*How American Standards Are Made.*" *This* 19-*page explanation may be secured from the American Standards Association, Inc.,* 70 *East* 45*th St., New York* 17, *N. Y.*

annual loss of $36,483,000 in the United States! Damage to buildings owned or used by public utilities are included in these approximations.

Data on nonbuilding and miscellaneous losses from lightning are incomplete but, relatively, they are substantial. Damages to inside and outside telephone plant fall into this category. In lieu of national statistics on this matter, each reader interested in reducing this item of cost of plant maintenance might do well to reflect a moment on the amount of this damage encountered during past years in his own company. In instances where this reflective review or similar evaluation analyses and appraisal studies have been made, the findings left much to be desired. In some cases, serious doubts were generated regarding the effectiveness of plant policies that were inherited from previous management regimes. *Matters pinpointed in this discussion include considerations that experience has shown to be weak areas in otherwise satisfactory telephone protection programs.*

New telephone plant can be damaged just as easily as old plant as the writer can testify from personal experience. For example, four consecutively located, new creosoted pine poles, recently set, were shattered by lightning beyond repair in one telephone company's plant. Again, when it comes to damaged conductors in telephone drop wire or cable, new plant as well as old plant suffers if not properly protected. Furthermore, as stated above, the record indicates that telephone company garages, warehouses, and even the exchange buildings themselves are not immune from being hit by strokes of lightning.

Part II of the Code for Protection Against Lightning, constituting over 50 percent of the entire document, covers the subject of the protection of buildings and miscellaneous property.

A discussion of lightning's origin, characteristics, and effects is included in NBS Handbook 46 as Appendix A, while Appendix B, consisting of a selected bibliography, completes the publication.

The Appendix is not officially a part of the Code, but it is included to supply background material which may prove of interest and value in connection with lightning protection.

The formulation of the Code was the result of the work of a committee sponsored jointly by (1) the National Fire Protection Association, (2) National Bureau of Standards, and (3) the American Institute of Electrical Engineers under the *sectional committee procedure*[5] of (4) the American Standards Association. The telephone industry is represented on this joint committee.

Code Furnishes Guidelines

ALL IN all, NBS Handbook 46 furnishes considerable practical, useful information with which appropriate employes in every telephone company should be generally familiar. Certain employes, by the very nature of their jobs, will require *detailed* knowledge of this and other codes to be named later on.

The Code is priced at 45 cents per copy from source (1) below or 50 cents from source (2) below. In either case it is a reasonable price considering that the life you save may be your own.

Where does one obtain a copy of this Code for Protection Against Lightning?

Answer: You can purchase copies of this Code in any quantity from either of the following two sources:

(1) Superintendent of Documents
Government Printing Office,
Washington 25, D. C.

(2) National Fire Protection Assn.
60 Batterymarch Street,
Boston 10, Mass.

In ordering printed matter from the Government Printing Office, it should be remembered that this publisher requires remittances to be made in advance of shipment.

[5]*Further details in regard to this method are available from ASA Headquarters, 70 East 45th Street, New York 17, N. Y., in a document entitled "The Organization and Work of ASA Sectional Committees" — PR 27.*

It may be of interest to larger telephone organizations to know that the Government Printing Office is authorized to sell copies of the Code (and most of its other publications) at a discount of 25 percent to purchasers of 100 or more copies of any single title to be sent to one address.

Likewise, the NFPA will furnish to you, upon request, the discount allowed for quantities of its pocket-size 1959 edition of the Code.

Safety Education Data Sheets

ONE SIMPLE, effective method of putting worthwhile safety instructions and information into the hands of telephone employes is to make liberal use of the many services[6] furnished by such organizations as the National Safety Council. For example, the National Safety Council can furnish a set of *safety education data sheets* on a wide variety of subjects. One sheet (No. 34) in this series is entitled, "Safe Conduct in Electrical Storms," and covers such phases of this vital subject as: lightning damage statistics, cause of lightning, protection of buildings, conduct in electrical storms, and sources of safety information. These data sheets are reprinted from the Council's publication, "Safety Education."

The National Safety Council also

[6]*For a summary of a wide range of such typical safety services and materials, write to the National Safety Council for a free copy of its eye-opening 52-page guide book entitled, "Catalog of Occupational Safety Services." The National Safety Council is a non-profit association — the recognized hub of the safety movement in America, located at 425 North Michigan Ave., Chicago 11, Ill.*

[7]*A leading safety periodical packed with new methods and reports prepared by professional safety specialists; factual data on accident hazards and problems; safety success stories; and industrial hygiene and health information. Sample copy free upon request from its publisher, the National Safety Council, at the mailing address included in footnote 6. Twelve-issue subscription, $6.50.*

"Off The Board"

Communications Securities

Market as of April 12, 1961	DIVIDEND	BID	ASKED	LAST SALE
American Tel. & Tel. Co.	$3.30			127⅜
Anglo-Canadian Tel. Co. (Br. Col. Dom. Rep.)	1.20	57½	60	
Bell Tel. Co. of Canada	2.20			49½
British Columbia Tel. Co.	2.20	46	47	
California Water & Tel. Co.	1.36	35½	37	
Calif. Pac. Util. Co. (Calif., Ore., Nev.)	.90	26	28	
Carolina Tel. & Tel. Co.	1.60	45	—	
Central Elec. & Gas Co.	1.20	34	36	
Central Tel. Co. (Minn., Ia., N. C.)	.88	30½	32	
Chenango & Unadilla Tel. (N. Y.)	1.20	26½	—	
Cincinnati & Suburban Tel. Co.	4.50	111½	114	
Citizens Util. Co. (Calif., Pa.) "A"	stk only	25	27	
Citizens Util. Co. (Calif., Pa.) "B"	.60	21½	23	
Commonwealth Tel. Co. (Pa.)	1.00	25½	27½	
Florida Tel. Corp.	1.00	30¼	31¾	
General Tel. & Electronics	.76			30⅝
Hawaiian Tel. Co.	1.08	19½	21	
Independent Tel. Co.	none	9	10	
Indiana Tel. Co.	.50	27	—	
Inter-County Tel. & Tel. Co. (Fla.)	.72+stk	28	30	
Inter-Mountain Tel. Co. (Va., Tenn.)	.80	16½	18	
International Tel. & Tel. Corp.	1.00			59½
Jamestown Tel. Corp.	6.00	88	—	
LaCrosse Tel. Corp.	.80	16	—	
Lincoln Tel. & Tel. Co. (Nebr.)	2.60	65	—	
Lorain Telephone Co. (Ohio)	1.40	32	—	
Middle States Tel. Co. (Ill.)	.92	33½	35	
Mountain States Tel. & Tel. (Ariz., Colo., Mont., Tex.)	.90			35⅛
New England Tel. & Tel. Co.	1.72			53½
North Carolina Tel. Co.	none	1½	2¼	
Northern Ohio Tel. Co.	2.00	64	69	
Pacific Tel. & Tel. Co.	1.14			45⅝
Peoples Tel. Corp. (Pa.)	4.00	105	—	
Pioneer Tel. Co. (Minn.)	1.00+stk	46	40	
Rochester Tel. Corp. (N. Y.)	1.00			26⅞
Southeastern Tel. Co. (Fla.)	1.00	28	30	
Southern Nevada Tel. Co.	1.20	42	45	
Southern New England Tel. Co.	2.20	51½	54	
Southwestern States Tel. Co. (La., Ark., Okla., Tex.)	1.28	31½	33	
Telephone Service Co. of Ohio "A"	.36	32	35	
Telephone Service Co. of Ohio "B"	.36	35	38	
Tidewater Tel. Co. (Va.)	1.40	26	—	
United Utilities, Inc.	1.60	27	29	
Virginia Tel. & Tel. Co.	1.00	21½	—	
West Coast Tel. Co. (Wash., Ore., Calif.)	1.36	35½	37	
Western Union Telegraph Co.	1.40			50
Western Utilities Corp.	.36	14	15	
Western Light & Tel. Co., Inc. (Mo., Kans., Ia.)	2.40	60	63	

(Source of Market — DEAN WITTER & CO.)

has available another special release called, "Lightning . . . and How To Dodge It," a printed form which is further identified by NSC as general safety reprint No. 6 (from the publication "National Safety News"),[7] which contains succinct advice of interest to telephone people along the lines discussed in more detail in the Code. For example, two of the statements contained in "Lightning . . . and How To Dodge It" are as follows:

"WHAT TO DO upon approach of an electrical storm. Such of the following precautions as fit the situation at hand should be taken:

"Discontinue work on fences, telephone lines, power lines, structural steel erection, pipelines, or other metal materials which might conduct a lightning charge.

"Stay away from the crests of hills or other places where protection is not afforded by tall objects. Avoid isolated trees, small exposed sheds or outbuildings, wire fences, and telephone poles."

In passing, it may be of interest to point out that the first draft of this special publication: "Lightning . . . and How To Dodge It," was written by the American Society of Safety Engineers. The final draft was prepared by the Engineering Committee of the Public Utilities Section of the National Safety Council, whose address is 425 North Michigan Avenue, Chicago 11, Illinois.

In short, this authoritative reference, like the several others included in this article, is a top-notch example of trustworthy, applicable information that is helpful in understanding and performing relevant telephone work. Six additional pertinent references are listed in the "Selected Reading References."

Other equally useful references on today's telephone protection fundamentals and practices will be cited and discussed in understandable language in the next part of this article. (*To be continued.*)

Selected Reading References

[1] "*Nature's Artillery.*" A 20-page

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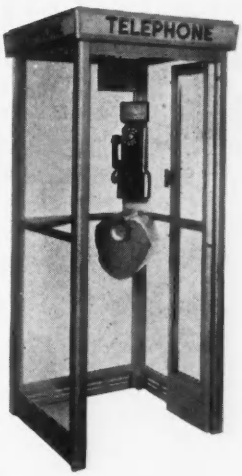

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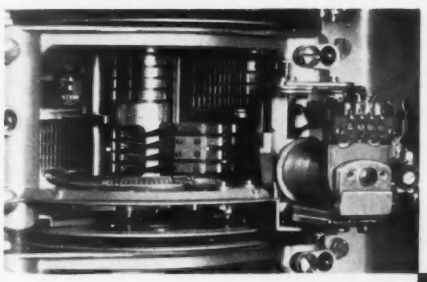

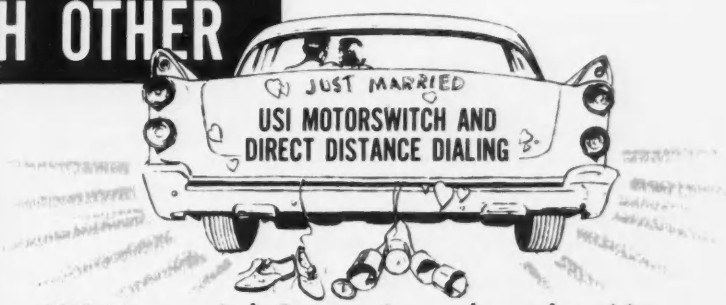

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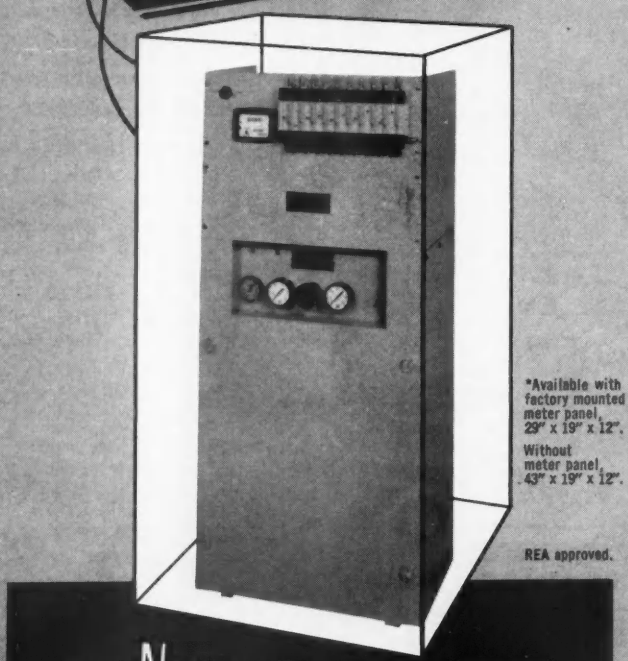

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booklet reprinted in 1952 by the National Board of Fire Underwriters, 85 John Street, New York 38, New York. Single copies are furnished free of charge.

The protection practices discussed in this booklet are intended to present essential facts for the guidance of property owners in their efforts to obtain protection for life and property against loss by lightning.

[2] "*Flash of Destruction.*" A 4-page pamphlet on the principal causes of fires. Published by the Underwriters' Laboratories, Inc., 207 East Ohio Street, Chicago 11, Illinois. Single copies furnished free of charge.

[3] "*Between Earth and Space.*" A book by Claude Orr. 253 pp. Published in 1959 by The Macmillan Company, 60 Fifth Avenue, New York 11, N. Y. Refer to Chapter 6 entitled: "Electricity in the Sky," pp. 66 to 81, inclusive. Price $4.95.

[4] "*Some Principles of Lightning Protection,*" by Edward Beck, manager, lightning arrester engineering department of the Westinghouse Electric Corporation. This article appeared in the April 27, 1950 issue of the Engineering News-Record, pages 36 and 37, in the magazine's department headed "Building Designers' Library." Published weekly by the McGraw-Hill Publishing Co., 330 West 42nd Street, New York 36, N.Y.

[5] "*Safety.*" A book by Messrs. Sidney J. Williams and W. W. Charters. See pages 136 to 139. Published in 1947 by The Macmillan Company, 60 Fifth Avenue, New York 11, N. Y. Price $3.88.

[6] "*Telephone Engineering and Construction Manual.*" Refer to the 8-part section No. 800 on telephone protection practices recommended for use to nearly 700 telephone companies financed by REA. These practices, illustrated with 22 figures, were issued over the period of 1951 to 1959 and include several addenda. Prepared by the telephone engineering department of the Rural Electrification Administration, Washington 25, D. C.

TELEPHONE ENGINEER
AND MANAGEMENT'S
INDUSTRY
NEWS REPORT

Telephone Industry News Highlights

COAST-TO-COAST REPORTS

USITA President C. C. Pearce addresses 66th annual meeting of the Iowa Independent Telephone Association. Harold Thompson reelected Iowa Association president. . . . 250 attend Kentucky Telephone Association convention. A. L. Daughters elected association president. . . . Stockholders approve United Tel. stock split.

Iowa Assoc. Holds 66th Annual Convention
USITA Pres. Pearce Addresses Meeting

THE HOUSEWIFE who is downtown shopping soon may be able to start the dinner roast before she starts home by dialing her phone number and a few additional digits.

USITA President, Clifford C. Pearce of Riceville, Ia., predicted this bit of magic among other things to come in the telephone industry during an address presented at the recent convention of the Iowa Independent Telephone Association in Des Moines.

Dinner by remote control would be one handy use of "dial-an-appliance" household equipment which soon may be on the market, Pearce said.

"This is one time when care should be used in dialing, as the wrong digit may open the garage door, start the remote control lawn mower or give the baby a bath," he said. "That evening if the couple should decide to play bridge with friends they merely pick up the phone and dial a few digits, and for the rest of the evening their calls will automatically be directed to the telephone where they are spending the evening."

Pearce also foresaw round-the-world telephone calls via satellite.

"Just picture this in the future if you can," he said, "telephone calls and TV programs carried by a world-wide communications network and 50 satellites orbiting 3,000 miles above

Officers and directors of the Iowa Independent telephone Association, standing (l. to r.): HARRY MILLER, Great Bend, Kans.; E. B. ZERWAS, second vice president, Manning; ROSS K. VERNON, Sioux Center; EDWARD G. CARLSON, Creston; HAROLD THOMPSON, president, Clear Lake; A. W. SANDERS, first vice president, New London; JOHN J. McINTOSH, Cedar Rapids; ARTHUR E. LONG, Sloan; WILLIAM F. MILLER, executive secretary, Des Moines; Seated (l. to r.): EARLE G. BELLAMY, Knoxville; NORWOOD TEAL, Keosauqua; USITA President C. C. PEARCE, Riceville; HOWARD AMICK, Des Moines; V. D. PECK, Primghar; GENE DAUBENDIEK, Jefferson; H. FILMORE MELICK, West Liberty; and J. L. VAN HORN, Grinnell.

USITA President CLIFFORD C. PEARCE, Riceville, Ia., addresses the 66th annual convention of the Iowa Independent telephone Association.

Officers of the Iowa Independent Telephone Association (l. to r.): HAROLD THOMPSON, Clear Lake, president; A. W. SANDERS, New London, first vice-president; E. B. ZERWAS, Manning, second vice-president; WILLIAM F. MILLER, Des Moines, executive secretary.

the earth, telephone calls, data transmission, TV to and from the United States and London, Johannesburg, Paris, Sydney, Tokyo, and all other major world cities beamed thousands of miles through space to repeater stations orbiting in space, then back to earth and the existing communications networks.

"This is not a far-off-dream. AT&T reports it is anxious to have a satellite in orbit within a year, and has the green light to go ahead with plans."

After his talk, Pearce was presented a plaque by the Iowa association for being the first Iowa president of the United States Independent Telephone Association. (*See page* 78.)

Another Iowa Convention speaker, Charles M. Hanna, Chicago, described "Faith, dedication, and a few laughs" as an antidote for the confusion that, he said, "seems to be the order of the day in our society."

Hanna said that Americans, if they are to conquer the confusion, must "rekindle faith in ourselves, our fellow man and our Creator; must rediscover the meaning of work and must revive our sense of humor."

"Work is a dirty word in the present, pearly period of the premeditated goofoff and the inordinately elongated coffee break," he stated. "We're becoming soft and lazy and we're

"Trading Post" at recent convention of the Iowa Independent Telephone Association featured round-table discussion and exchange of ideas on 25 subjects.

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For more information about AChieverfone, write or call AC today.

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RF output: 22.5 watts into 52 ohm load

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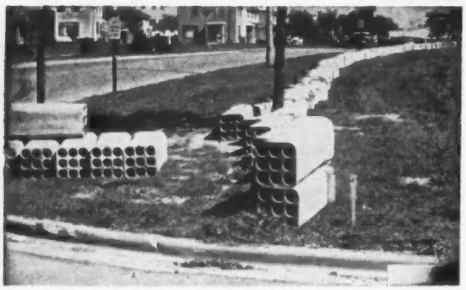

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Chicago Pre-Cast Products Corp., 29W629 North Aurora Rd., Naperville, Ill. Tel: ELmwood 5-2700—2701
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Eastern Pre-Cast Corporation, 675 Main St., Tullytown, Pa. Tel: Windsor 9-3750
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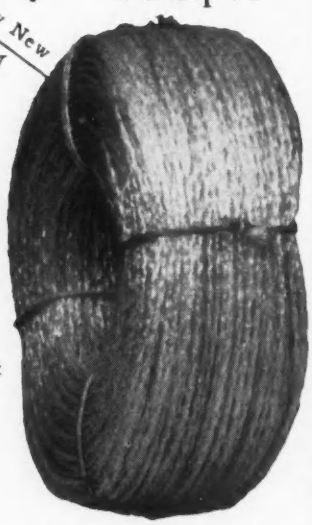

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going to demand a little more and a better grade of effort from ourselves."

Calling a sense of humor "our theft-proof secret weapon," Hanna said that it stems from a sense of the proper order of things.

"We must never look upon ourselves as one of a billion homogeneous lumps in a great big tapioca pudding called society," he commented. "Once you do that, you're lost."

Pervading all other social ills, said Hanna, is our lack of religious faith.

"Unhappily, most Americans believe more in the refrigerator, the shiny new car, the little woman and the juicy steak than in the Lord," he said.

"The boys in the Kremlin would talk and plan quite differently if they could be convinced that a deeply religious America would be willing to die for its faith and freedom."

Hanna listed the spirit of religion, the spirit of creative art and research, and the spirit of business enterprise as the pillars on which our civilization is built, and said that they must be preserved if we are to survive.

The 748 delegates were welcomed to the convention by President Harold Thompson, Clear Lake. A report of progress was made by William F. Miller, Des Moines, executive secretary of the association.

In keeping with the convention theme, "Progress by All Means," most of the effort at the meeting was directed toward continued improvement of both rural and urban services. A unique feature of the program was the "Idea Trading Post," presenting round table discussion and exchange of ideas on 25 subjects. Members chose their own tables and rotated at set intervals. The "Idea Trading Posi" offered information on new ideas and developments and aided in solving individual company problems.

Some of the subjects discussed were: (1) Carrier equipment for rural phone service; (2) Direct Distance Dialing; (3) mobile radio telephone service; (4) dial systems; and (5) farm communications.

All officers of the Iowa Independent Telephone Association were reelected at the closing of the 66th annual convention. They are: President,

Harold Thompson, Clear Lake; first vice-president, A. W. Sanders, New London; second vice-president; E. B. Zerwas, Manning, and executive secretary, William F. Miller, Des Moines.

The association had the largest attendance in its history at the 1961 meeting. More than 1000 members represented the 325 Independent telephone companies in Iowa.

New member elected to the board of directors was Norwood Teal of Keosauqua. Directors re-elected are: Howard Amick, Des Moines; Earle G. Bellamy, Knoxville; Edward G. Carlson, Creston; Gene Daubendiek, Jefferson; Arthur E. Long, Sloan; Clyde McFarlin, Montezuma; John J. McIntosh, Cedar Rapids; H. Filmore Melik, West Liberty; Harry Miller, Great Bend, Kansas; C. C. Pearce, Riceville; V. D. Peck, Primghar; A. W. Sanders, New London; Harold Thompson, Clear Lake; L. E. Travis, Newton; J. L. Trevillion, Chariton; J. L. Van Horn, Grinnell; Ross K. Vernon, Sioux Center; Kenneth A. Young, Fort Dodge; E. B. Zerwas, Manning; Named as honorary directors were Henry B. Melick, West Liberty; Loyd F. Morrison, Grinnnell and W. H. Fowler, Pella.

Kentucky Independents Meet at Lexington

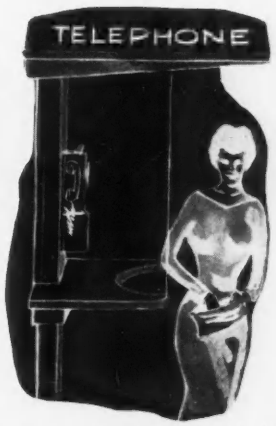
TELEPHONE calls and television programs carried by a worldwide communications network of satellites were described by C. C. Pearce, president of the United States Independent Telephone Association at the recent convention of the Kentucky Telephone Association.

Pearce told the more than 250 delegates attending the meeting at the Phoenix Hotel, Lexington, that a network of 50 satellites, orbiting 3,000 miles above the earth, would handle calls, data transmissions, television to and from the United States, London, Paris, Tokyo and all other major cities.

The transmissions will be beamed thousands of miles through space to repeater stations orbiting in space and then back to earth and the existing communications networks, he continued.

Pointing out that decentralization

THE CANOPY BY GLADWIN



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COMMERCIAL CORD

USITA Pres. CLIFFORD C. PEARCE, Riceville, Ia., addresses the recent convention of the Kentucky Telephone Association.

of business, industry and government causes increasing need for more communications with their widespread operations. Pearce cited an increasing desire among residence customers for more special services such as bedroom telephones, answering devices, home telephone systems, and signaling and dialing devices.

He stated that Independent telephone companies will benefit most by the shift of population away from large cities.

Pearce was introduced by D. B. Corman, KTA president, who conducted the meeting.

E. Bruce Kennedy, Kentucky commissioner of economic development, discussed the work of his department at the closing session.

Kennedy said that communication facilities are of vital importance to industry planning to locate in Kentucky and encouraged association members to become active in local improvement programs.

He commended an employe of the General Telephone Co. of Ky., saying that this individual, while living in Elizabethtown, had been instrumental in bringing a new industry to that town.

Kenndey said it is important to satisfy industry already located within the state because of its influence on other business. He cited an example of two businesses which moved to Kentucky from the same town in another state and said the second one

Please turn to page 72

the magic word is...

DO NOT DEPOSIT COIN UNTIL PARTY ANSWERS
1. LISTEN FOR DIAL TONE
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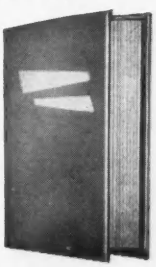

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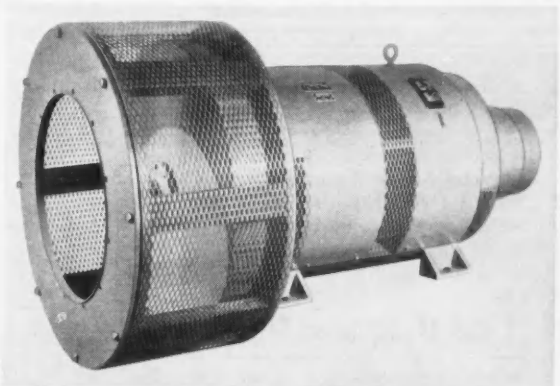

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came because the first was satisfied.

Also on the afternoon program was Stuart H. Gates, of the Southern Bell Telephone & Telegraph Co., who discussed transmission problems of the industry.

Gates gave a demonstration of proper transmission of telephone facilities, using equipment manufactured for the American Telephone & Telegraph Co. to test long-distance facilities.

The speaker stated that proper transmission results in customer satisfaction with service. He emphasized the need for companies to test equipment periodically in order to avoid transmission difficulties.

A panel talk on transmission was featured during the morning session. Panelists included Ray Soard Jr., of the General Telephone Co.; Billy Jo Albany, of the South Central Rural Telephone Co-operative, Inc. and E. D. Clark of the Cincinnati Suburban Bell Telephone Co.

New officers of the KTA were presented at the annual banquet. A. L. Daughters, of the Citizens Telephone Co., Covington, is the new president.

Other officers include Gordon Saunders, of the General Telephone Co., Lexington, vice president; L. T. Utz, of the Consolidated Telephone Co. of Florence, vice president; and Ralph F. Kessinger, General Telephone Co. of Lexington, secretary-treasurer.

Stockholders Approve United Stock Split

A 2-FOR-1 stock split was approved by the stockholders of United Utilities, Inc. at the annual meeting held in Abilene, Kans.

The authorized capital was increased to 10 million shares from 3 million, and the par value was reduced from $10 to $5 a share. The 2-for-1 stock split resulting from the adjustment in the par value will result in 5,127,958 shares being outstanding. The present annual indicated dividend rate on the new shares is 80 cents.

The utility, which provides various services to some 550 communities in 16 states, spent about 25 million dollars on new facilities last year and has budgeted 27½ million dollars for 1961, C. A. Scupin, president, told stockholders.

"It is the policy of the company to secure the broadest posible market for its stock," he said. "Present shareholders now number in excess of 16,500. The 2-for-1 stock split will attain for the United System the wider distribution necessary for continued growth."

New officers of the Kentucky Telephone Association are (l. to r.): A. L. DAUGHTERS, Covington, pres.; GORDON SAUNDERS, Lexington, vice pres.; L. T. UTZ, Florence, vice pres.; and RALPH F. KESSINGER, sec.-treas.

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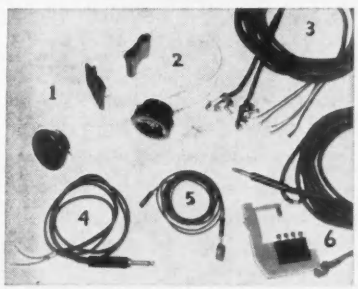

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"With the problem of debt financing now largely resolved through public and private lending agencies," stated Phillip J. Lucier, president of the new organization, "the majority of Independents face a new problem: how to raise equity capital that will support a continuing program of expansion."

PHILLIP J. LUCIER

"It should be possible for a well-managed operating company to obtain financial assistance in broadening the scope and quality of its service without surrendering its autonomy as the price of progress," continued Lucier. "Telephone Communications Corp. is primarily an organization specializing in the field of financing, both equity and debt. Telephone company management, freed of this responsibility, can concentrate in its own area of specialization — the operating function."

G. WARREN SCHOMAKER

G. Warren Schomaker, vice president of Telephone Communications Corp., further explained the purpose of the new holding company as furnishing a source from which an operating company obtains not only the necessary equity to improve its financial position, but also other specialized services, such as rate and commission work, toll separation studies, and engineering assistance in new communication techniques.

Original investors in Telephone Communications Corp. include a number of large investment houses and stock specialists. As an initial investment, the holding company has purchased the Millstadt (Ill.) Telephone Co., and has undertaken an expansion program of its three dial exchanges. Morris Kugler of Okawville, Illinois, has been retained as general manager. Contracts to acquire the common stock of Tuftonboro Telephone Co., Inc., Melvin Village, N. H., and the Treasure State Telephone Co., Absarokee, Mont., are underway.

P. J. Lucier and G. W. Schomaker are known as telephone men by telephone men. Both were "born" in the industry; each has a background that includes sales, as well as financing. Lucier participated in establishing the first nationwide program of debt financing for smaller telephone companies — Stromberg-Carlson Credit Corp. — and has managed that operation for the past 10 years. Schomaker, before joining Lucier in the Credit Corp., was manager of apparatus engineering and later a sales representative with Stromberg-Carlson.

Telephone Communications Corp. will make its headquarters at No. 525 Siteman Building, 111 South Bemiston St., Clayton 5, Mo.

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C. C. Pearce, Riceville, Ia., president of the USITA and a director of the Iowa Independent Telephone Association received a surprise gift as he closed his speech at the association convention in Des Moines, when the large mounted photo blow-up of Pearce was unveiled and presented to him by WILLIAM F. MILLER, (right), executive secretary of the association.

THE BACK OF THE BOOK

By JOHN G. REYNOLDS

Iowa Assoc. Honors USITA Pres. Pearce

IOWA Independents took time out from their 66th annual convention to honor *Clifford C. Pearce,* an Iowa telephone man who started out to be a banker, and is now the president of the United States Independent Telephone Association, and president and general manager of the Farmer's Telephone Co., Riceville, Ia.

In 1938 a chance conversation with an old gentleman who lived across the way from his home in Plymouth, Ia., helped determine the course of Cliff Pearce's life. The gentleman was president of the small telephone company in that community, and was looking for a young man to replace his elderly lineman, who was in failing health. Cliff immediately promised to be an apprentice as soon as the lineman felt better and could take him along on the job.

But he was not destined to have time for such a leisurely introduction to the telephone business. That very night the old lineman died, and the following morning the president of the telephone company told Cliff there were telephones to repair, and handed him the tools.

Cliff was soon burning a lot of midnight oil, studying everything he could lay his hands on. He talked with all the telephone men he could contact, and even climbed the poles to see how telephone men did their jobs. And in a short time, he had a fair idea as to how a magneto system worked.

After working at this job for slightly more than two years, Cliff answered a blind ad. He was surprised when he got a telephone call from Riceville, Iowa, just 50 miles away, where he was asked to appear the next day at a meeting of the board of directors. Here, out of more than 200 applicants, Cliff was hired as manager of the Farmer's Telephone Co.

At that time the company had a few more than 500 telephones, and the property had depreciated to a value of less thna $30,000. Pearce proceeded to build it up, and in 1945, acquired controlling interest in this company. A few months later he purchased the Lime Springs Telephone Co.

Cliff had a lot of hard work to do during those years while serving as general practioner — doing everything from arranging for financing to doing the work of the grunt. But he found that other telephone men were liberal with advice and assistance, which he was glad to receive.

Today, Cliff Pearce is among those who give assistance. He has served on the board of directors of the Iowa Independent Telephone Association since 1942, as president for the years 1952 to 1954, and was chairman of the first Small Company Committee in Iowa, a position which he especially enjoyed as he met folks from other small companies and had a chance to help them with problems he had already solved.

He has been a member of the Board of Directors of the United States Telephone Association since 1947, and has served as chairman of the USITA Advertising Committee. In 1958 he was elected second vice-president of USITA, and in 1960 he was named USITA president.

Iowa Independents have good reason for being proud of Cliff Pearce. For a banker turned telephone man he has established a record of accomplishment that has earned him the friendship and admiration of telephone men from coast to coast.

Boissy Passes Along A Bit of "Phonology"

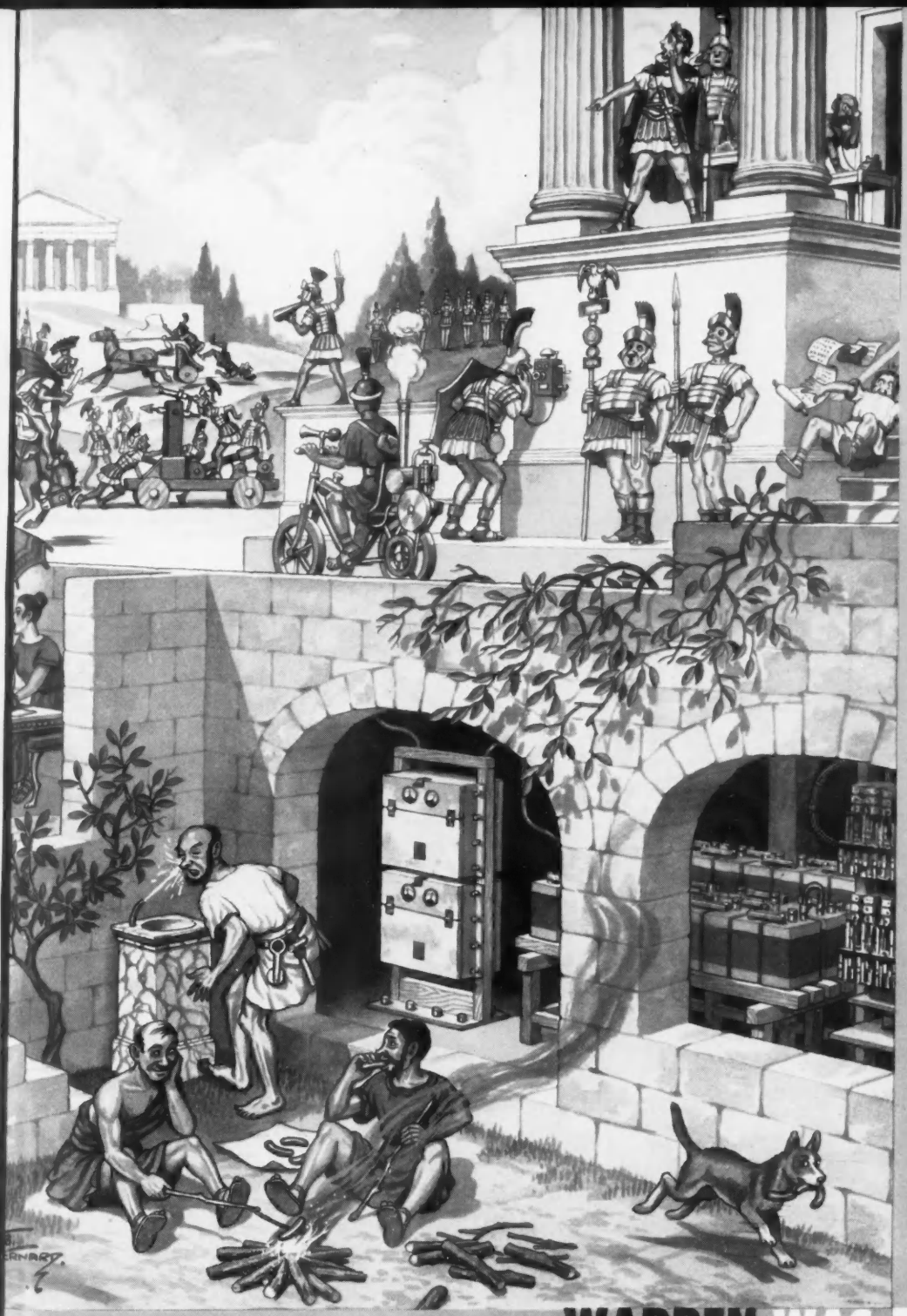
LAST month, G. E. (Gil) Boissy, advertising/sales promotion manager for ITT Kellogg, Chicago, passed along the following bit of "Phonology" which seems to prove it is possible to tell a person's age by his reaction to the telephone bell:

(1) *Youth*: — It can't ring without being sure that it's for you, with exciting news.

(2) *Late* 20's, 30's *and* 40's: — Hopeful anticipation, increasingly giving way to annoyance.

(3) *The* 50's *and* 60's: — You hope it's the wrong number and that no one wants you to do anything.

(4) *The* 70's: — Let someone else answer it — it won't be for you anyhow, thank goodness!



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*...like the Warren "Two-High" TFR shown here. There's no place like Rome to show off its most important feature: namely, that maintenance is a picnic. (This fully transistorized automatic battery charger combination is literally maintenance free.)

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MORE FEATURES:

- **EXTRA EFFICIENCY...** packs most capacity in the smallest space — up to 200 amps of charging current mounted on a 23" rack.
- **EXTRA ECONOMY...** fully automatic controls. No extras to buy — failure alarm relays and relay rack are standard equipment.
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Warren offers a complete line of single phase and 3-phase 48 volt TFR's for "Two-High" operation. We'll be happy to send you complete information on any or all of them.

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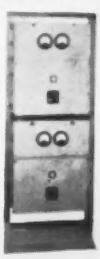

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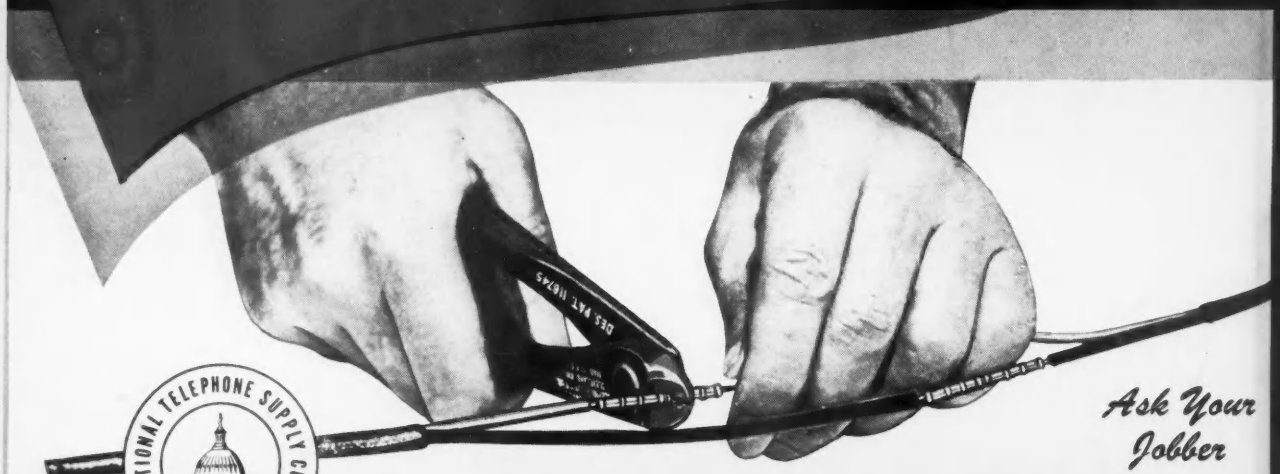

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